AIWA®

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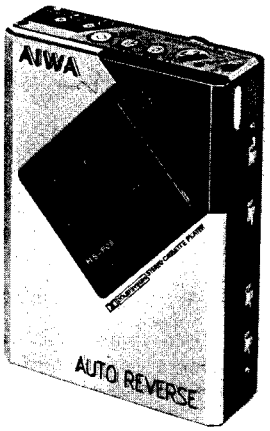
SERVICE MANUAL

STEREO CASSETTE PLAYER

MODEL NO.

HS-P08

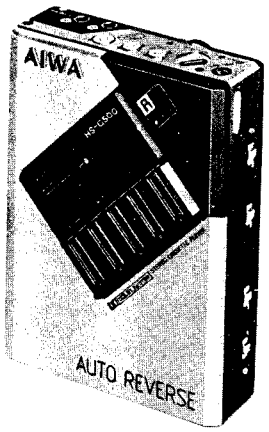


HS-P08

STEREO CASSETTE PLAYER

MODEL NO.

HS-G08, G500



HS-G08·G500

TYPE. Y

Follow the instructions carefully, which will allow the user to optimise the products' performance and give many years of serivce.

1. **No illegibility shall be given to the specification plate, the caution labels, the fuse labels and others.**
2. **When, on pattern sides of circuit boards, additional repair-parts have been made up, the parts shall be firmly glued to circuit boards or other components, unless the parts can be attached firmly.**
3. **The following matters shall be maintained as they are, when repairing.**
   1) Soldering of lead-wire ends
   2) Wiring and holding of lead-wires with wire-clips and binders
   3) Materials of lead-wires
   4) Location of all kinds of insulators
4. **General instructions for mechanism repair**
   1) The heads, capstan and pinch roller shall be cleaned of good quality alcohol after repaired, because dirty heads shall cause distorted sounds while dirty capstan and pinch roller shall occur wow/flutter and take-up fault.
   2) Lubricants been stained the surfaces of transmitting portion of the belts, idlers, capstan and pinch roller shall be removed, because slippery and faulty tape travel shall be caused.
   3) When oiling, only one or two drops shall be applied so as not to run over and be dispersed. Note should be taken of the metal fitting for the capstan and rotating portions of the idlers and pinch roller, especially.
   4) E-rings and poly slider washers shall be replaced with new ones, if once those have been removed. – No re-utilization due to unreliability.
   5) Regular spare-parts shall always be used for repair, because using irregular parts and tampering with the products shall cause deterioration, mulfunction and damage.

SPECIFICATIONS

HS-P08

Track arrangement:	4-track, 2-channel, stereo
Frequency range:	40 to 12,500 Hz (NORMAL tape) 40 to 16,000 Hz (METAL tape)
Practical maximum output:	20 mW + 20 mW (total: 40 mW) (EIAJ/17Ω)
Output terminal:	Phones jack, 3.5 φ stereo mini x 2
Power source:	Battery DC 3 V R03 (UM-4, AAA, LR-03) x 2 Domestic AC power (using optional AC adapter)
Battery life:	• Using manganese batteries (R03, UM-4, AAA) Approx. 2.5 hours (EIAJ, 1 mW output, playback mode) • Using alkaline batteries (LR-03, AAA) Approx. 5 hours (EIAJ, 1 mW output, playback mode)
Dimensions:	80.5 (H) x 108.4 (W) x 24 (D) mm (excluding any projecting parts)
Maximum dimensions:	82 (H) x 108.9 (W) x 26.2 (D) mm
Weight:	260 g (including batteries)
Accessories:	Stereo headphones x 1 Belt clip x 1 Carrying case x 1 Remote controller x 1

HS-G08·G500

Track arrangement:	4-track, 2-channel, stereo
Frequency range:	40 to 12,500 Hz (NORMAL tape) 40 to 16,000 Hz (METAL tape)
Practical maximum output:	20 mW + 20 mW (total: 40 mW) (EIAJ/17Ω)
Output terminal:	Phones jack, 3.5 φ stereo mini x 2
Power source:	Battery DC 3 V R03 (UM-4, AAA, LR-03) x 2 Domestic AC power (using optional AC adapter)
Battery life:	• Using manganese batteries (R03, UM-4, AAA) Approx. 2.5 hours (EIAJ, 1 mW output, playback mode) • Using alkaline batteries (LR-03, AAA) Approx. 5 hours (EIAJ, 1 mW output, playback mode)
Dimensions:	80.5 (H) x 108.4 (W) x 24 (D) mm (excluding any projecting parts)
Maximum dimensions:	82 (H) x 108.9 (W) x 27.9 (D) mm
Weight:	260 g (including batteries)
Accessories:	Stereo headphones x 1 Belt clip x 1 Carrying case x 1 Remote controller x 1

- Design and specifications are subject to change without notice.
- Noise reduction system manufactured under license from Dolby Laboratories Licensing Corporation.
- Dolby and the DD symbol are trademarks of Dolby Laboratories Licensing Corporation.

☆ **MEMO** ☆

ELECTRICAL MAIN PARTS LIST (HS-P08)

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- ★ -mark means less required items and availabilities may be limited.

Ref. No.	Part No.	Description
=== IC ===		
	87-020-496	IC,BA 3708F
	87-020-498	IC,BA3818F
	87-020-224	IC,NJM2063A
	87-020-234	IC,TA7688F(S)
	87-020-235	IC,TA7709F(S)
	87-020-495	IC,TC9305F
=== TRANSISTOR ===		
	87-026-225	FET 2SJ106GR
	87-026-233	TRANSISTOR,DTA114T K
	87-026-239	TRANSISTOR,DTC114T K
	87-026-223	TRANSISTOR,DTC143T K
	87-026-224	TRANSISTOR,DTC143XK
	87-026-210	TRANSISTOR,DTC144K
	89-111-624	TRANSISTOR,2SA1162Y
	89-112-134	TRANSISTOR,2SA1213Y
	89-327-125	TRANSISTOR,2SC2712 GR
	89-333-266	TRANSISTOR,2SC3326B
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A		MAIN CIRCUIT BOARD
C1	★ 87-010-176	CAP,CHIP 680P
C2	★ 87-010-176	CAP,CHIP 680P
C3	★ 87-010-114	CAP,ELECT 47-4
C4	★ 87-010-114	CAP,ELECT 47-4
C5	★ 87-010-192	CAP,CHIP 0.022
C6	★ 87-010-192	CAP,CHIP 0.022
C7	★ 87-010-191	CAP,CHIP 0.015
C8	★ 87-010-191	CAP,CHIP 0.015
C9	★ 87-010-115	CAP,ELECT 100-4
C10	★ 87-010-082	CAP,ELECT-N 220-4
C11	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C12	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C13	★ 87-010-188	CAP,CHIP 6800P
C14	★ 87-010-188	CAP,CHIP 6800P
C15	★ 87-010-193	CAP,CHIP 0.033
C16	★ 87-010-193	CAP,CHIP 0.033
C17	★ 87-010-194	CAP,CHIP 0.047
C18	★ 87-010-194	CAP,CHIP 0.047
C19	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C20	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C21	★ 87-010-186	CAP,CHIP 4700P
C22	★ 87-010-186	CAP,CHIP 4700P
C23	★ 87-015-785	CAP,CHIP 0.1
C24	★ 87-010-114	CAP,ELECT 47-4
C25	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C26	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C27	★ 87-015-627	CAP,CHIP 1000P
C28	★ 87-015-627	CAP,CHIP 1000P
C30	★ 87-010-082	CAP,ELECT-N 220-4
C31	★ 87-010-082	CAP,ELECT-N 220-4
C32	★ 87-010-082	CAP,ELECT-N 220-4
C33	★ 87-015-785	CAP,CHIP 0.1
C34	★ 87-015-785	CAP,CHIP 0.1
C35	★ 87-010-082	CAP,ELECT-N 220-4
C36	★ 87-010-082	CAP,ELECT-N 220-4
C37	★ 87-010-076	CAP,ELECT 22-6.3
C38	★ 87-010-114	CAP,ELECT 47-4
C39	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C40	★ 87-010-186	CAP,CHIP 4700P
C41	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C42	★ 87-015-785	CAP,CHIP 0.1
C43	★ 87-015-785	CAP,CHIP 0.1
C44	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C45	★ 87-010-192	CAP,CHIP 0.022
C46	★ 87-010-114	CAP,ELECT 47-4
C47	★ 87-010-074	CAP,ELECT 4.7-35
C48	★ 87-010-090	CAP,CHIP TANTALUM 4.7/4
C50	★ 87-015-785	CAP,CHIP 0.1
D1	87-020-027	CHIP DIODE 1SS184
D2	87-020-125	DIODE 1SS181
D3	87-020-125	DIODE 1SS181
D4	★ 87-020-015	LED TRL102A (REVPLAY)
D5	★ 87-020-015	LED TLR102A (OPE/BATT.PLAY)
D6	87-020-027	DIODE 1SS181
D7	87-020-027	CHIP DIODE 1SS184
D8	87-020-027	CHIP DIODE 1SS184
D9	87-020-027	CHIP DIODE 1SS184
D10	87-020-339	CHIP DIODE 1SS226
J1	87-049-411	JACK 3.5 (PHONES)
J2	87-049-411	JACK 3.5 (PHONES,REMOTE)
J3	87-049-549	JACK DC (DC 3V)
PR1	87-022-507	PHOTO SENSOR SP1900(0)
R19	★ 87-022-033	RES,CHIP 430K
R20	★ 87-022-033	RES,CHIP 430K
S5	87-031-925	SLIDE SW (REVERSE MODE)
S7	87-031-926	SLIDE SW (REMOTE/HOLD)
S9	87-031-949	SLIDE SW (REW/FF)
S10	87-031-925	SLIDE SW (TAPE)
S11	87-031-925	SLIDE SW (DOLBY NR)
S13	87-031-936	LEAF SW (PL)
SFR1	★ 87-021-873	SFR 500
SFR2	★ 87-021-873	SFR 500
SFR3	★ 87-021-949	SFR 300K
TH1	★ 87-026-222	THERMISTOR HT-50K
VR1	87-021-936	VOLUME 20KA (VOLUME)
=== SWITCH CIRCUIT BOARD SECTION ===		
PCB-B	★ 82-698-608	KEY SW ASSY (W/PCB-B)
=== MOTOR CIRCUIT BOARD SECTION ===		
M1	82-698-609	MOTOR ASSY (W/PCB-C)
=== HEAD ASSY CIRCUIT BOARD SECTION ===		
PCB-D	82-698-605	HEAD (FLEXIBLE) CIRCUIT BOARD
PH	82-698-604	PH ASSY
=== RELAY CIRCUIT BOARD SECTION ===		
PCB-E	82-698-603	RELAY CIRCUIT BOARD
=== MISCELLANEOUS ===		
PL1	★ 87-045-250	SOLENOID,PL (2H)
PL2	★ 87-045-250	SOLENOID,PL (2H)
S6	87-031-908	LEAF SW (MH) (HEAD UP)
S8	87-031-907	LEAF SW (C) (CASSETTE)
S12	87-031-908	LEAF SW (MH) (MS)

ELECTRICAL MAIN PARTS LIST (HS-G08, G500)

CAPACITORS
No mark, U, UF: μF
P, PF : pF

COILS
MMH: mH
UH : μH

FUSE
MMA: mA

Ref. No.	Part No.	Description
=== IC ===		
	87-020-496	IC,BA 3708F
	87-020-498	IC,BA3818F
	87-020-224	IC,NJM2063A
	87-020-234	IC,TA7688F(S)
	87-020-235	IC,TA7709F(S)
	87-020-495	IC,TC9305F
	87-020-497	IC,TK 10580M
=== TRANSISTOR ===		
	87-026-225	FET 2SJ106GR
	87-026-233	TRANSISTOR,DTA114T K
	87-026-239	TRANSISTOR,DTC114T K
	87-026-223	TRANSISTOR,DTC143T K
	87-026-224	TRANSISTOR,DTC143XK
	87-026-210	TRANSISTOR,DTC144K
	89-111-624	TRANSISTOR,2SA1162Y
	89-112-134	TRANSISTOR,2SA1213Y
	89-327-125	TRANSISTOR,2SC2712 GR
	89-333-266	TRANSISTOR,2SC3326B
=== MAIN CIRCUIT BOARD SECTION ===		
PCB-A		MAIN CIRCUIT BOARD
C1	87-010-176	CAP,CHIP 680P
C2	87-010-176	CAP,CHIP 680P
C3	★ 87-010-114	CAP,ELECT 47-4
C4	★ 87-010-114	CAP,ELECT 47-4
C5	★ 87-010-192	CAP,CHIP 0.022
C6	★ 87-010-192	CAP,CHIP 0.022
C7	★ 87-010-191	CAP,CHIP 0.015
C8	★ 87-010-191	CAP,CHIP 0.015
C9	★ 87-010-115	CAP,ELECT 100-4
C10	★ 87-010-082	CAP,ELECT-N 220-4
C11	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C12	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C13	★ 87-010-188	CAP,CHIP 6800P
C14	★ 87-010-188	CAP,CHIP 6800P
C15	★ 87-010-193	CAP,CHIP 0.033
C16	★ 87-010-193	CAP,CHIP 0.033
C17	★ 87-010-194	CAP,CHIP 0.047
C18	★ 87-010-194	CAP,CHIP 0.047
C19	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C20	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C21	★ 87-010-186	CAP,CHIP 4700P
C22	★ 87-010-186	CAP,CHIP 4700P
C23	★ 87-015-785	CAP,CHIP 0.1
C24	★ 87-010-114	CAP,ELECT 47-4
C25	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C26	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C27	★ 87-015-627	CAP,CHIP 1000P
C28	★ 87-015-627	CAP,CHIP 1000P
C29	★ 87-015-785	CAP,CHIP 0.1
C30	★ 87-015-785	CAP,CHIP 0.1
C31	★ 87-010-428	CAP,CHIP S 0.012
C32	★ 87-010-428	CAP,CHIP S 0.012
C33	★ 82-681-618	CAP,CHIP S 0.068FZ
C34	★ 82-681-618	CAP,CHIP S 0.068FZ
C35	★ 87-010-185	CAP,CHIP 3900P
C36	★ 87-010-185	CAP,CHIP 3900P
C37	★ 87-010-192	CAP,CHIP 0.022
C38	★ 87-010-192	CAP,CHIP 0.022
C39	★ 87-010-179	CAP,CHIP S B1200P (K)
C40	★ 87-010-179	CAP,CHIP S B1200P (K)
C41	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C42	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C43	★ 87-010-427	CAP,CHIP S 0.039
C44	★ 87-010-427	CAP,CHIP S 0.039
C45	★ 87-010-173	CAP,CHIP 390P
C46	★ 87-010-173	CAP,CHIP 390P
C47	★ 87-010-188	CAP,CHIP 6800P
C48	★ 87-010-188	CAP,CHIP 6800P
C49	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C50	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C51	★ 87-010-627	CAP,CHIP 1000P
C52	★ 87-010-627	CAP,CHIP 1000P
C53	★ 87-010-082	CAP,ELECT-N 220-4
C55	★ 87-010-082	CAP,ELECT-N 220-4
C56	★ 87-010-082	CAP,ELECT-N 220-4
C57	★ 87-010-076	CAP,ELECT 22-6.3
C58	★ 87-010-114	CAP,ELECT 47-4
C59	★ 87-015-785	CAP,CHIP 0.1
C60	★ 87-015-785	CAP,CHIP 0.1
C61	★ 87-010-082	CAP,ELECT-N 220-4
C62	★ 87-010-082	CAP,ELECT-N 220-4
C63	★ 87-010-114	CAP,ELECT 47-4
C64	★ 87-010-015	CAP,ELECT 100-4
C65	★ 87-010-186	CAP,CHIP 4700P
C66	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C67	★ 87-010-090	CAP,TANTALUM 4.7-4
C68	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C69	★ 87-015-785	CAP,CHIP 0.1
C70	★ 87-015-785	CAP,CHIP 0.1
C71	★ 87-010-192	CAP,CHIP 0.022
C72	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C73	★ 87-015-785	CAP,CHIP 0.1
C74	★ 87-015-785	CAP,CHIP 0.1
D1	87-020-027	CHIP DIODE 1SS184
D2	87-020-125	CHIP DIODE 1SS181
D3	87-020-125	CHIP DIODE 1SS181
D4	★ 87-020-015	LED TLR102A (REV PLAY)
D5	★ 87-020-015	LED TLR102A (OPE/BATT.PLAY)
D6	87-020-027	CHIP DIODE 1SS184
D7	87-020-027	CHIP DIODE 1SS184
D8	87-020-027	CHIP DIODE 1SS184
D9	87-020-339	CHIP DIODE 1SS226
D10	87-020-027	CHIP DIODE 1SS184
J1	87-049-411	JACK 3.5 G (PHONES)
J2	87-049-411	JACK 3.5 G (PHONES,REMOTE)
J3	87-049-549	JACK DC (DC JACK)
PR1	87-022-507	PHOTO SENSOR SP1900(0)
R19	★ 87-022-033	RES,CHIP 430K
R20	★ 87-022-033	RES,CHIP 430K
S5	87-031-925	SLIDE SW (DIRECTION MODE)
S7	87-031-926	SLIDE SW (REMOTE/HOLD)
S9	87-031-949	SLIDE SW (FWD/REV)
S10	87-031-925	SLIDE SW (TAPE SELECTOR)
S11	87-031-925	SLIDE SW (DOLBY-NR)
S13	87-031-936	LEAF SW (PL)
SFR1	★ 87-021-873	SFR 500
SFR2	★ 87-021-873	SFR 500
SFR3	★ 87-021-949	SFR 300K
TH1	★ 87-026-222	THERMISTER HT-50K
VR1	87-021-936	VOLUME 20KA (VOLUME)

8)

- +++ mark denotes a component of assembled part which part code is represented by a previously stated component.
- ★ -mark means less required items and availabilities may be limited.

ELECTRICAL MAIN PARTS LIST (HS-G08, G500)

CAPACITORS
No mark, U, UF: μF
P, PF : pF

COILS
MMH: mH
UH : μH

FUSE
MMA: mA

Ref.No.	Part No.	Descripton
C41	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C42	★ 87-015-785	CAP,CHIP 0.1
C43	★ 87-015-785	CAP,CHIP 0.1
C44	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C45	★ 87-010-192	CAP,CHIP 0.022
C46	★ 87-010-114	CAP,ELECT 47-4
C47	★ 87-010-074	CAP,ELECT 4.7-35
C48	★ 87-010-090	CAP,CHIP TANTALUM 4.7/4
C50	★ 87-015-785	CAP,CHIP 0.1
D1	87-020-027	CHIP DIODE 1SS184
D2	87-020-125	DIODE 1SS181
D3	87-020-125	DIODE 1SS181
D4	★ 87-020-015	LED TRL102A (REVPLAY)
D5	★ 87-020-015	LED TLR102A (OPE/BATT.PLAY)
D6	87-020-027	DIODE 1SS181
D7	87-020-027	CHIP DIODE 1SS184
D8	87-020-027	CHIP DIODE 1SS184
D9	87-020-027	CHIP DIODE 1SS184
D10	87-020-339	CHIP DIODE 1SS226
J1	87-049-411	JACK 3.5 (PHONES)
J2	87-049-411	JACK 3.5 (PHONES,REMOTE)
J3	87-049-549	JACK DC (DC 3V)
PR1	87-022-507	PHOTO SENSOR SP1900(0)
R19	★ 87-022-033	RES,CHIP 430K
R20	★ 87-022-033	RES,CHIP 430K
S5	87-031-925	SLIDE SW (REVERSE MODE)
S7	87-031-926	SLIDE SW (REMOTE/HOLD)
S9	87-031-949	SLIDE SW (REW/FF)
S10	87-031-925	SLIDE SW (TAPE)
S11	87-031-925	SLIDE SW (DOLBY NR)
S13	87-031-936	LEAF SW (PL)
SFR1	★ 87-021-873	SFR 500
SFR2	★ 87-021-873	SFR 500
SFR3	★ 87-021-949	SFR 300K
TH1	★ 87-026-222	THERMISTOR HT-50K
VR1	87-021-936	VOLUME 20KA (VOLUME)
		=== SWITCH CIRCUIT BOARD SECTION ===
PCB-B	★ 82-698-608	KEY SW ASSY (W/PCB-B)
		=== MOTOR CIRCUIT BOARD SECTION ===
M1	82-698-609	MOTOR ASSY (W/PCB-C)
		=== HEAD ASSY CIRCUIT BOARD SECTION ===
PCB-D	82-698-605	HEAD (FLEXIBLE) CIRCUIT BOARD
PH	82-698-604	PH ASSY
		=== RELAY CIRCUIT BOARD SECTION ===
PCB-E	82-698-603	RELAY CIRCUIT BOARD
		=== MISCELLANEOUS ===
PL1	★ 87-045-250	SOLENOID,PL (2H)
PL2	★ 87-045-250	SOLENOID,PL (2H)
S6	87-031-908	LEAF SW (MH) (HEAD UP)
S8	87-031-907	LEAF SW (C) (CASSETTE)
S12	87-031-908	LEAF SW (MH) (MS)

Ref.No.	Part No.	Description
		=== IC ===
	87-020-496	IC,BA 3708F
	87-020-498	IC,BA3818F
	87-020-224	IC,NJM2063A
	87-020-234	IC,TA7688F(S)
	87-020-235	IC,TA7709F(S)
	87-020-495	IC,TC9305F
	87-020-497	IC,TK 10580M
		=== TRANSISTOR ===
	87-026-225	FET 2SJ106GR
	87-026-233	TRANSISTOR,DTA114T K
	87-026-239	TRANSISTOR,DTC114T K
	87-026-223	TRANSISTOR,DTC143T K
	87-026-224	TRANSISTOR,DTC143XK
	87-026-210	TRANSISTOR,DTC144K
	89-111-624	TRANSISTOR,2SA1162Y
	89-112-134	TRANSISTOR,2SA1213Y
	89-327-125	TRANSISTOR,2SC2712 GR
	89-333-266	TRANSISTOR,2SC3326B
		=== MAIN CIRCUIT BOARD SECTION ===
PCB-A		MAIN CIRCUIT BOARD
C1	87-010-176	CAP,CHIP 680P
C2	87-010-176	CAP,CHIP 680P
C3	★ 87-010-114	CAP,ELECT 47-4
C4	★ 87-010-114	CAP,ELECT 47-4
C5	★ 87-010-192	CAP,CHIP 0.022
C6	★ 87-010-192	CAP,CHIP 0.022
C7	★ 87-010-191	CAP,CHIP 0.015
C8	★ 87-010-191	CAP,CHIP 0.015
C9	★ 87-010-115	CAP,ELECT 100-4
C10	★ 87-010-082	CAP,ELECT-N 220-4
C11	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C12	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C13	★ 87-010-188	CAP,CHIP 6800P
C14	★ 87-010-188	CAP,CHIP 6800P
C15	★ 87-010-193	CAP,CHIP 0.033
C16	★ 87-010-193	CAP,CHIP 0.033
C17	★ 87-010-194	CAP,CHIP 0.047
C18	★ 87-010-194	CAP,CHIP 0.047
C19	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C20	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C21	★ 87-010-186	CAP,CHIP 4700P
C22	★ 87-010-186	CAP,CHIP 4700P
C23	★ 87-015-785	CAP,CHIP 0.1
C24	★ 87-010-114	CAP,ELECT 47-4
C25	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C26	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C27	★ 87-015-627	CAP,CHIP 1000P
C28	★ 87-015-627	CAP,CHIP 1000P
C29	★ 87-015-785	CAP,CHIP 0.1
C30	★ 87-015-785	CAP,CHIP 0.1
C31	★ 87-010-428	CAP,CHIP S 0.012
C32	★ 87-010-428	CAP,CHIP S 0.012
C33	★ 82-681-618	CAP,CHIP S 0.068FZ
C34	★ 82-681-618	CAP,CHIP S 0.068FZ
C35	★ 87-010-185	CAP,CHIP 3900P
C36	★ 87-010-185	CAP,CHIP 3900P
C37	★ 87-010-192	CAP,CHIP 0.022
C38	★ 87-010-192	CAP,CHIP 0.022
C39	★ 87-010-179	CAP,CHIP S B1200P (K)

Ref.No.	Part No.	Description
C40	★ 87-010-179	CAP,CHIP S B1200P (K)
C41	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C42	★ 87-010-214	CAP,CHIP TANTALUM 0.68-16
C43	★ 87-010-427	CAP,CHIP S 0.039
C44	★ 87-010-427	CAP,CHIP S 0.039
C45	★ 87-010-173	CAP,CHIP 390P
C46	★ 87-010-173	CAP,CHIP 390P
C47	★ 87-010-188	CAP,CHIP 6800P
C48	★ 87-010-188	CAP,CHIP 6800P
C49	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C50	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C51	★ 87-010-627	CAP,CHIP 1000P
C52	★ 87-010-627	CAP,CHIP 1000P
C53	★ 87-010-082	CAP,ELECT-N 220-4
C55	★ 87-010-082	CAP,ELECT-N 220-4
C56	★ 87-010-082	CAP,ELECT-N 220-4
C57	★ 87-010-076	CAP,ELECT 22-6.3
C58	★ 87-010-114	CAP,ELECT 47-4
C59	★ 87-015-785	CAP,CHIP 0.1
C60	★ 87-015-785	CAP,CHIP 0.1
C61	★ 87-010-082	CAP,ELECT-N 220-4
C62	★ 87-010-082	CAP,ELECT-N 220-4
C63	★ 87-010-114	CAP,ELECT 47-4
C64	★ 87-010-015	CAP,ELECT 100-4
C65	★ 87-010-186	CAP,CHIP 4700P
C66	★ 87-015-932	CAP,CHIP TANTALUM 0.47-20
C67	★ 87-010-090	CAP,TANTALUM 4.7-4
C68	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C69	★ 87-015-785	CAP,CHIP 0.1
C70	★ 87-015-785	CAP,CHIP 0.1
C71	★ 87-010-192	CAP,CHIP 0.022
C72	★ 87-015-934	CAP,CHIP TANTALUM 2.2-4
C73	★ 87-015-785	CAP,CHIP 0.1
C74	★ 87-015-785	CAP,CHIP 0.1
D1	87-020-027	CHIP DIODE 1SS184
D2	87-020-125	CHIP DIODE 1SS181
D3	87-020-125	CHIP DIODE 1SS181
D4	★ 87-020-015	LED TLR102A (REV PLAY)
D5	★ 87-020-015	LED TLR102A (OPE/BATT.PLAY)
D6	87-020-027	CHIP DIODE 1SS184
D7	87-020-027	CHIP DIODE 1SS184
D8	87-020-027	CHIP DIODE 1SS184
D9	87-020-339	CHIP DIODE 1SS226
D10	87-020-027	CHIP DIODE 1SS184
J1	87-049-411	JACK 3.5 G (PHONES)
J2	87-049-411	JACK 3.5 G (PHONES,REMOTE)
J3	87-049-549	JACK DC (DC JACK)
PR1	87-022-507	PHOTO SENSOR SP1900(0)
R19	★ 87-022-033	RES,CHIP 430K
R20	★ 87-022-033	RES,CHIP 430K
S5	87-031-925	SLIDE SW (DIRECTION MODE)
S7	87-031-926	SLIDE SW (REMOTE/HOLD)
S9	87-031-949	SLIDE SW (FWD/REV)
S10	87-031-925	SLIDE SW (TAPE SELECTOR)
S11	87-031-925	SLIDE SW (DOLBY-NR)
S13	87-031-936	LEAF SW (PL)
SFR1	★ 87-021-873	SFR 500
SFR2	★ 87-021-873	SFR 500
SFR3	★ 87-021-949	SFR 300K
TH1	★ 87-026-222	THERMISTER HT-50K
VR1	87-021-936	VOLUME 20KA (VOLUME)

Ref.No.	Part No.	Description
		=== GEQ CIRCUIT BOARD SECTION ===
	82-698-606	GRAPHIC VR 100KX5 ASSY (W/PCB-B)
		=== SWITCH CIRCUIT BOARD SECTION ===
PCB-C	★ 82-698-608	KEY SW ASSY (W/PCB-C)
		=== MOTOR CIRCUIT BOARD SECTION ===
M1	82-698-609	MOTOR ASSY (W/PCB-D)
		=== HEAD ASSY CIRCUIT BOARD SECTION ===
PCB-E	82-698-605	HEAD (FLEXIBLE) CIRCUIT BOARD
PH	82-698-604	PH ASSY
		=== RELAY CIRCUIT BOARD SECTION ===
PCB-F	82-698-603	RELAY CIRCUIT BOARD
		=== MISCELLANEOUS ===
PL1	★ 87-045-250	SOLENOID,PL (2H)
PL2	★ 87-045-250	SOLENOID,PL (2H)
S6	87-031-908	LEAF SW (MH) (HEAD UP)
S8	87-031-907	LEAF SW (C) (CASSETTE)
S12	87-031-908	LEAF SW (MH) (MS)

Chip resistor part cord

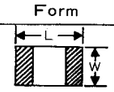
88 — □□□ — □□□

A

Figure

Value of resistor

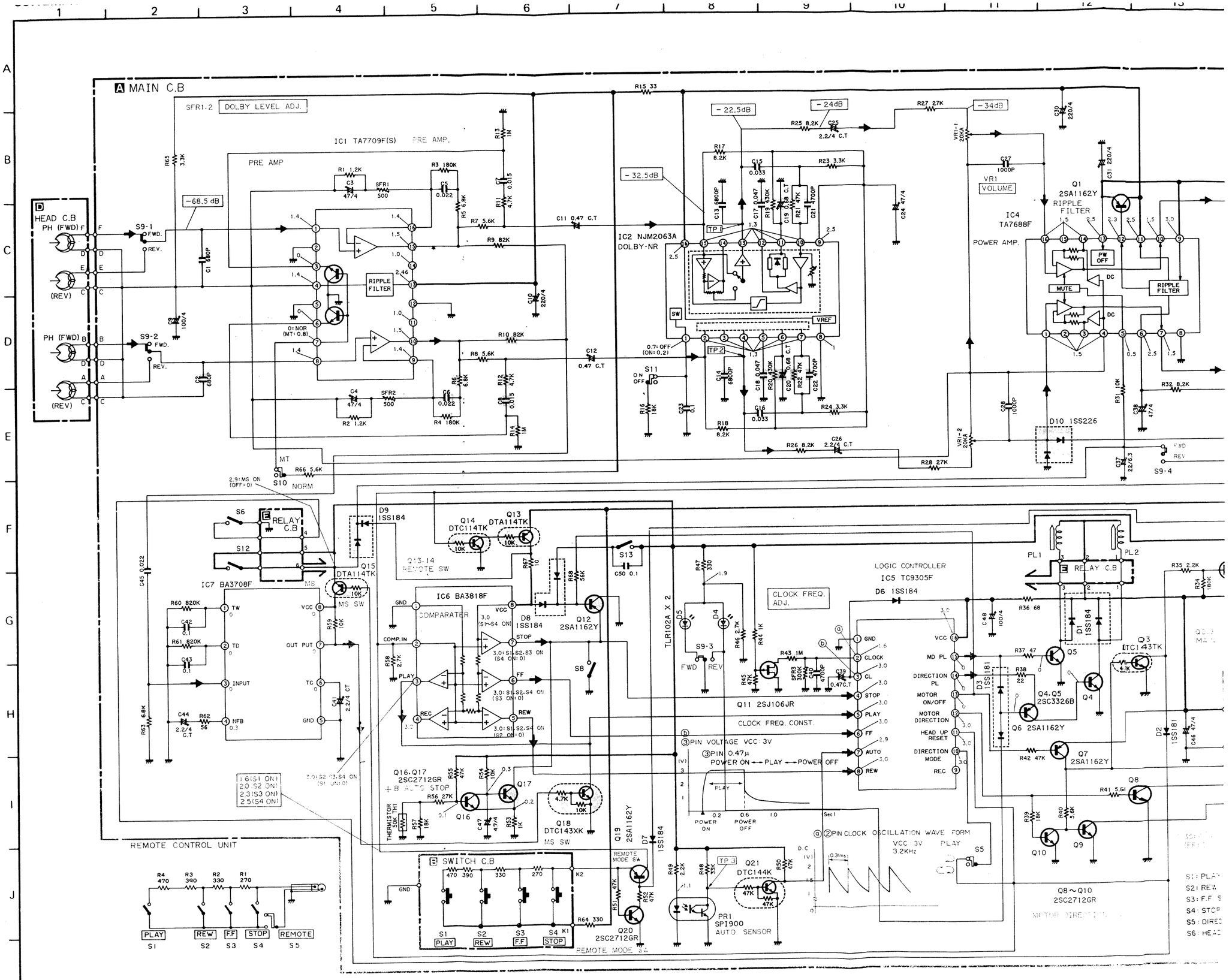
Chip resistor

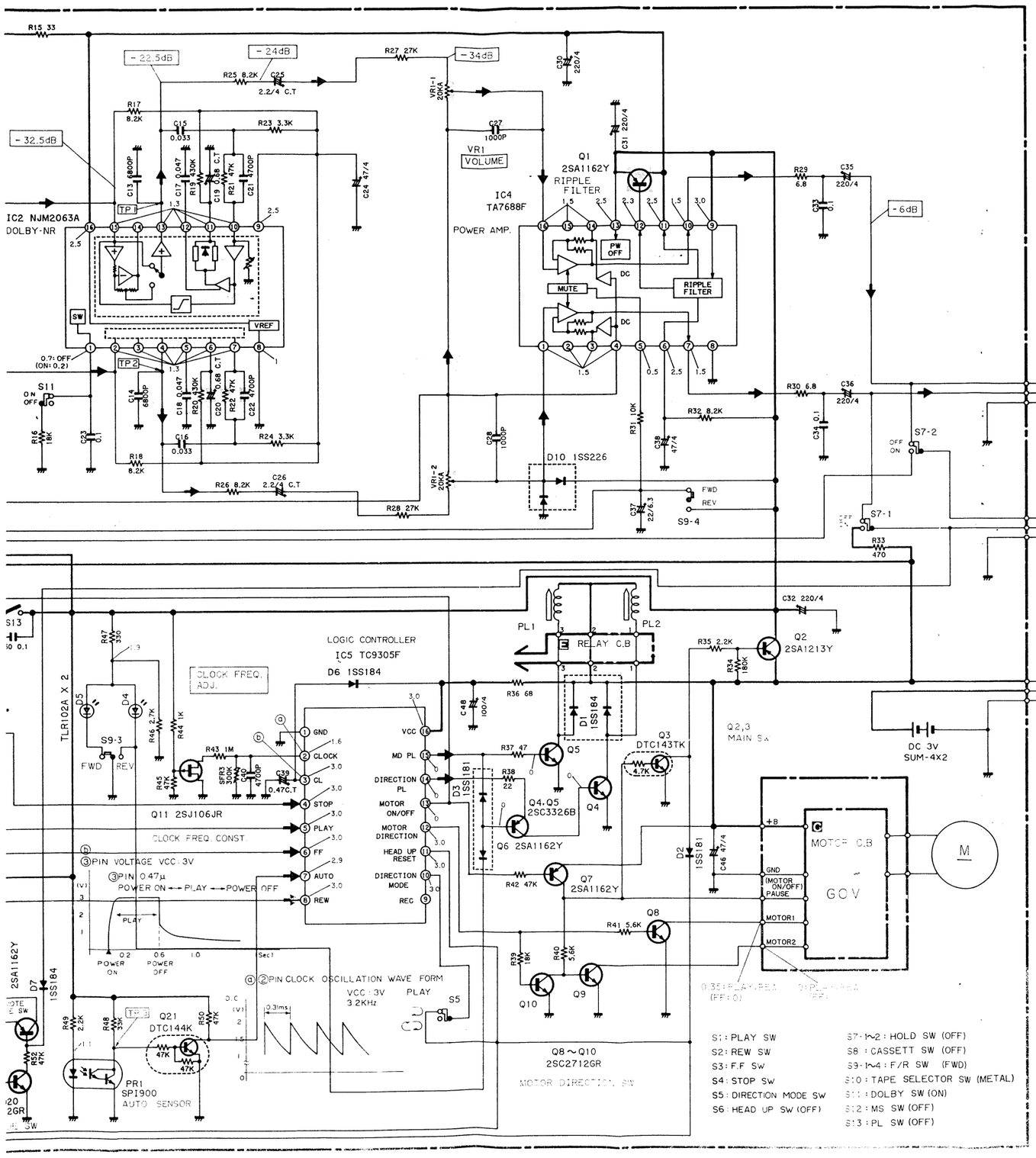
Power value	Type	Dimensions (mm) Form	L	W	t
1/10W	A:118		2	1.25	0.45
1/8 W	A:129		3.2	1.6	0.5 ~0.7

Example of chip resistor

560Ω 88 — 129 — 561

10kΩ 88 — 129 — 103

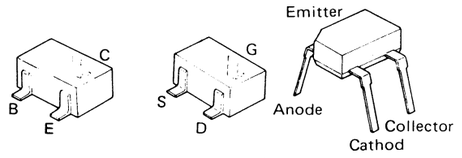

A MAIN C.B
SFR1.2 DOLBY LEVEL ADJ.
IC1 TA7709F(S) PRE AMP.
PRE AMP
-68.5 dB
HEAD C.B
PH (FWD)
(REV)
S9-1
S9-2
FWD.
REV.
C1 680P
C2 680P
C8 100/4
C10 220/4
C11 0.47 C.T
C12 0.47 C.T
R1 1.2K
R2 1.2K
R3 180K
R4 180K
R5 6.8K
R6 6.8K
R7 5.6K
R8 5.6K
R9 82K
R10 82K
R11 4.7K
R12 4.7K
R13 1M
R14 1M
R65 3.3K
SFR1 500
SFR2 500
C3 47/4
C4 47/4
C5 0.022
C6 0.022
C7 0.015
C9 0.015
RIPPLE FILTER
0: NOR (MT: 0.8)
MT
S10 NORM
R66 5.6K
2.9: MS ON (OFF: 0)
IC2 NJM2063A
DOLBY-NR
-22.5dB
-24dB
-32.5dB
-34dB
R15 33
R17 8.2K
R23 3.3K
R25 8.2K
R27 27K
C15 0.033
C16 0.033
C17 0.047
C18 0.047
C19 0.68 C.T
C20 0.68 C.T
C21 4700P
C22 4700P
C23 0.1
C24 47/4
C25 2.2/4 C.T
C26 2.2/4 C.T
R16 18K
R18 8.2K
R19 430K
R20 430K
R21 47K
R22 47K
R24 3.3K
R26 8.2K
R28 27K
TP1
TP2
SW
VREF
0.7: OFF (ON: 0.2)
S11 ON OFF
VR1-1 20KA
VR1-2 20KA
VR1 VOLUME
C27 1000P
C28 1000P
IC4 TA7688F
POWER AMP.
Q1 2SA1162Y
RIPPLE FILTER
PW OFF
MUTE
DC
RIPPLE FILTER
C30 220/4
C31 220/4
C32 47/4
C38 47/4
R31 10K
R32 8.2K
D10 1SS226
S9-4
FWD
REV
C37 22/6.3
REMOTE CONTROL UNIT
R4 470
R3 390
R2 330
R1 270
PLAY S1
REW S2
F.F S3
STOP S4
REMOTE S5
S6 RELAY C.B
S12
C45 0.022
IC7 BA3708F
MS
MS SW
R60 820K
R61 820K
R62 56
R63 6.8K
R58 2.7K
R59 10K
C41 2.2/4 CT
C42 0.1
C43 0.1
C44 2.2/4 C.T
TW
TD
INPUT
NFB
OUT PUT
TC
GND
VCC
D9 1SS184
Q14 DTC114TK
Q13 DTA114TK
Q15 DTA114TK
10K
Q13.14 REMOTE SW
R67 10
R68 56K
S13
C50 0.1
IC6 BA3818F
COMPARATER
COMP.IN
PLAY
REC
STOP
FF
REW
D8 1SS184
Q12 2SA1162Y
S8
3.0 (S1~S4 ON)
3.0: S1.S2.S3 ON (S4 ON: 0)
3.0: S1.S2.S4 ON (S3 ON: 0)
3.0: S1.S3.S4 ON (S2 ON: 0)
1.6(S1 ON)
2.0(S2 ON)
2.3(S3 ON)
2.5(S4 ON)
Q16.Q17 2SC2712GR
+B AUTO STOP
Q16
Q17
R53 1K
R54 10K
R55 47K
R56 27K
R57 18K
THERMISTOR 50K TH1
C47 47/4
Q18 DTC143XK
MS SW
Q19 2SA1162Y
D7 1SS184
REMOTE MODE SW
SWITCH C.B
S1 PLAY
S2 REW
S3 F.F
S4 STOP
K1 K2
R64 330
Q20 2SC2712GR
REMOTE MODE SW.
TLR102A X 2
D5
D4
S9-3
FWD REV
R47 330
R46 2.7K
R44 1K
R45 47K
R43 1M
SFR3 100K
C40 470P
C39 0.47C.T
Q11 2SJ106JR
CLOCK FREQ. CONST.
LOGIC CONTROLLER
IC5 TC9305F
D6 1SS184
CLOCK FREQ. ADJ.
GND
CLOCK
CL
STOP
PLAY
FF
AUTO
REW
VCC
MD PL
DIRECTION PL
MOTOR ON/OFF
MOTOR DIRECTION
HEAD UP RESET
DIRECTION MODE
REC
③PIN VOLTAGE VCC: 3V
③PIN 0.47μ
POWER ON ⟷ PLAY ⟷ POWER OFF
POWER ON
POWER OFF
②PIN CLOCK OSCILLATION WAVE FORM
VCC: 3V
3.2KHz
PLAY
TP3
Q21 DTC144K
R48 33K
R49 2.2K
R50 47K
PR1 SP1900 AUTO SENSOR
PL1
PL2
RELAY C.B
R36 68
C48 100/4
D1 1SS184
D3 1SS181
D2 1SS181
Q3 DTC143TK
Q5
Q4
Q4.Q5 2SC3326B
Q6 2SA1162Y
Q7 2SA1162Y
Q8
Q9
Q10
R37 47
R38 22
R42 47K
R41 5.6K
R39 18K
R40 5.6K
R34 180K
R35 2.2K
C46 47/4
Q8~Q10 2SC2712GR
S1: PLAY
S2: REW
S3: F.F
S4: STOP
S5: DIRECTION
S6: HEAD



NOTES:

1) ■ B (+) power supply
2) ➡ Signal path
3) The voltage is the reference value measured with a tester (20 k-ohms/V DC) when there are no signals.
4) Resistors with no designation have a rated power of 1/8W and a tolerance of ±5%.
5) Capacitors with no designation have a dielectric strength of less than 50WV.
6) The only capacitor tolerance indicated are ±5% (J) and ±10% (K).
7) Ceramic capacitor symbols:
   - For temperature compensation (SL)
   - High dielectric constant system (YY)
   - High dielectric constant system (YW, YP, YZ)
   - Semiconductor ceramic
   - For temperature compensation (SH)
8) Explanation of symbols
   - Chip parts
   - Chip capacitor
   - Chip tantalum capacitor
   - Chip resistor
   - Chip diode
   - Chip transistor

● This schematic diagram is subject to change without notice in the interests of improved performance.



DTA113
DTC143
DTC144
2SA1162
2SC2712
2SC3326

FET2SJ106

SPI 900

WIRING-1 (HS-P08)

※1 0(NORMAL) 0.8(METAL)

IC 1

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	1.4	0	0	1.4	0	0	※1	1.4
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	1.4	1.5	1.0	0	2.5	1.0	1.5	1.4

※2 DOLBY OFF : 0.7
DOLBY ON : 0.2

IC 2

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	※2	1.3	1.3	1.3	1.3	1.3	1.3	1.0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	2.5	1.3	1.3	1.3	1.3	—	1.3	2.5

IC 4

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	1.5	1.5	1.5	1.5	0.5	2.5	1.5	0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	3.0	1.5	2.5	2.3	2.5	1.5	1.5	1.5

IC 5

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	1.6	3.0	3.0	3.0	3.0	2.9	3.0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	—	3.0	3.0	3.0	0	0	0	3.0

IC 6

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	※3	3.0 (S2,3,4) ON 0 (S1 ON)	3.0	3.0 (S1,3,4) ON 0 (S2 ON)	3.0 (S1,2,4) ON 0 (S3 ON)	3.0 (S1,2,3) ON 0 (S4 ON)	3.0 (S1-4) ON

※3 S1 ON 1.6
S2 ON 2.0
S3 ON 2.3
S4 ON 2.5

IC 7

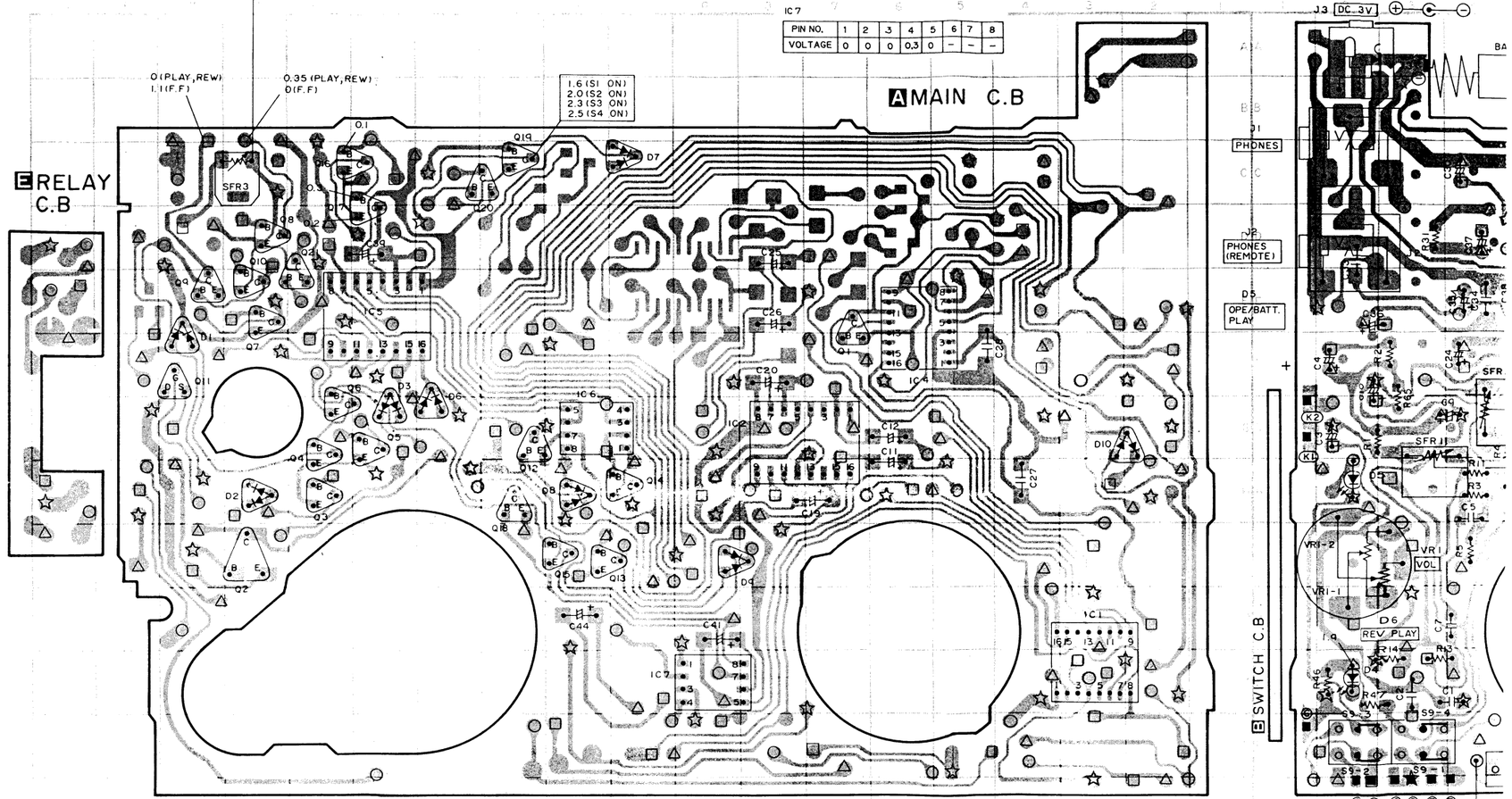
PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	0	0	0.3	0	—	—	—

Clock Frequency Adjustment
Settings: · Adjustment location: S F R 3
· Test point: IC5, ②pin
Method: Adjust so the oscillation frequency is 3.2kHz.

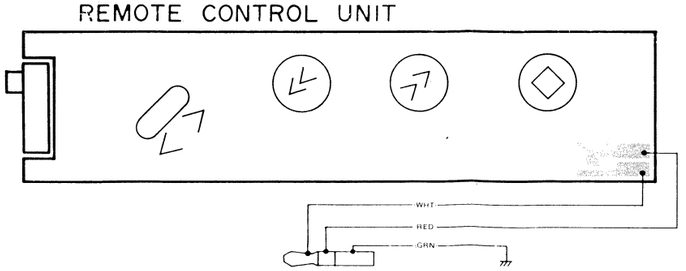
0 (PLAY, REW)
1.1 (F.F)

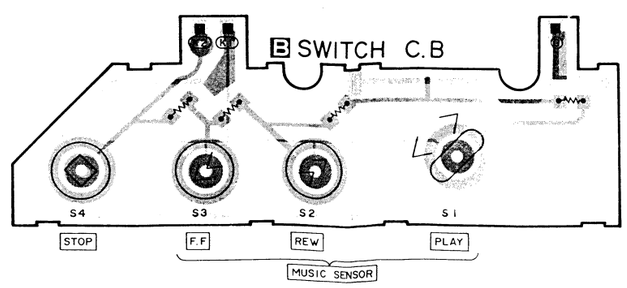
0.35 (PLAY, REW)
0 (F.F)

1.6 (S1 ON)
2.0 (S2 ON)
2.3 (S3 ON)
2.5 (S4 ON)



REMOTE CONTROL UNIT





NOTES (1) Component side pattern (B SWITCH C.B ONLY) Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

※1 O(NORMAL) 0.8(METAL)

NO.	1	2	3	4	5	6	7	8
TAGE	1.4	0	0	1.4	0	0	X 1	1.4
NO.	9	10	11	12	13	14	15	16
TAGE	1.4	1.5	1.0	0	2.5	1.0	1.5	1.4

※2 DOLBY OFF : 0.7
DOLBY ON : 0.2

IC 2

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	※2	1.3	1.3	1.3	1.3	1.3	1.3	1.0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	2.5	1.3	1.3	1.3	1.3	—	1.3	2.5

IC 4

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	1.5	1.5	1.5	1.5	0.5	2.5	1.5	0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	3.0	1.5	2.5	2.3	2.5	1.5	1.5	1.5

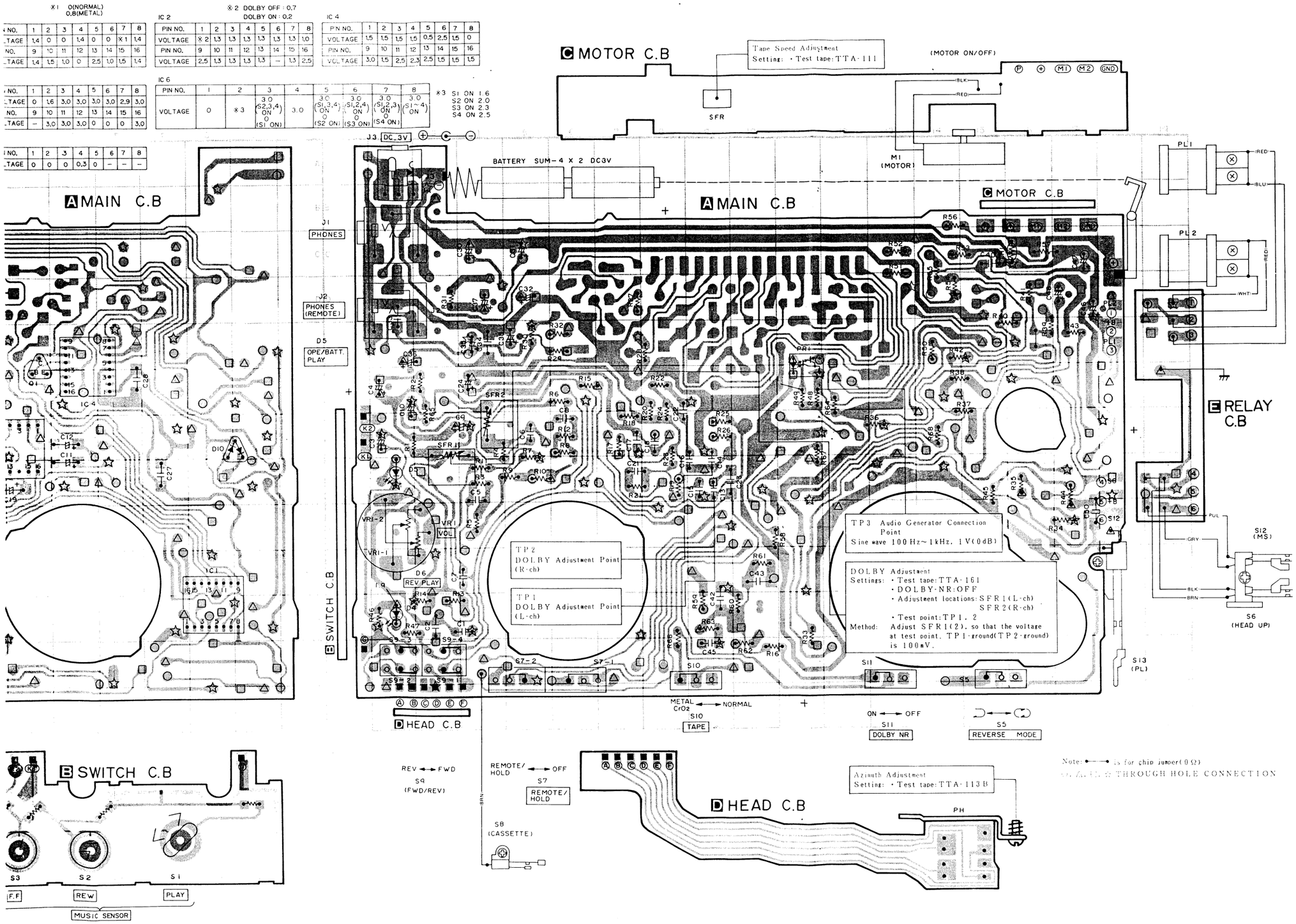
NO.	1	2	3	4	5	6	7	8
TAGE	0	1.6	3.0	3.0	3.0	3.0	2.9	3.0
NO.	9	10	11	12	13	14	15	16
TAGE	—	3.0	3.0	3.0	0	0	0	3.0

IC 6

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	※3	3.0 (S2,3,4 ON) 0 (S1 ON)	3.0	3.0 (S1,3,4 ON) 0 (S2 ON)	3.0 (S1,2,4 ON) 0 (S3 ON)	3.0 (S1,2,3 ON) 0 (S4 ON)	3.0 (S1~4 ON)

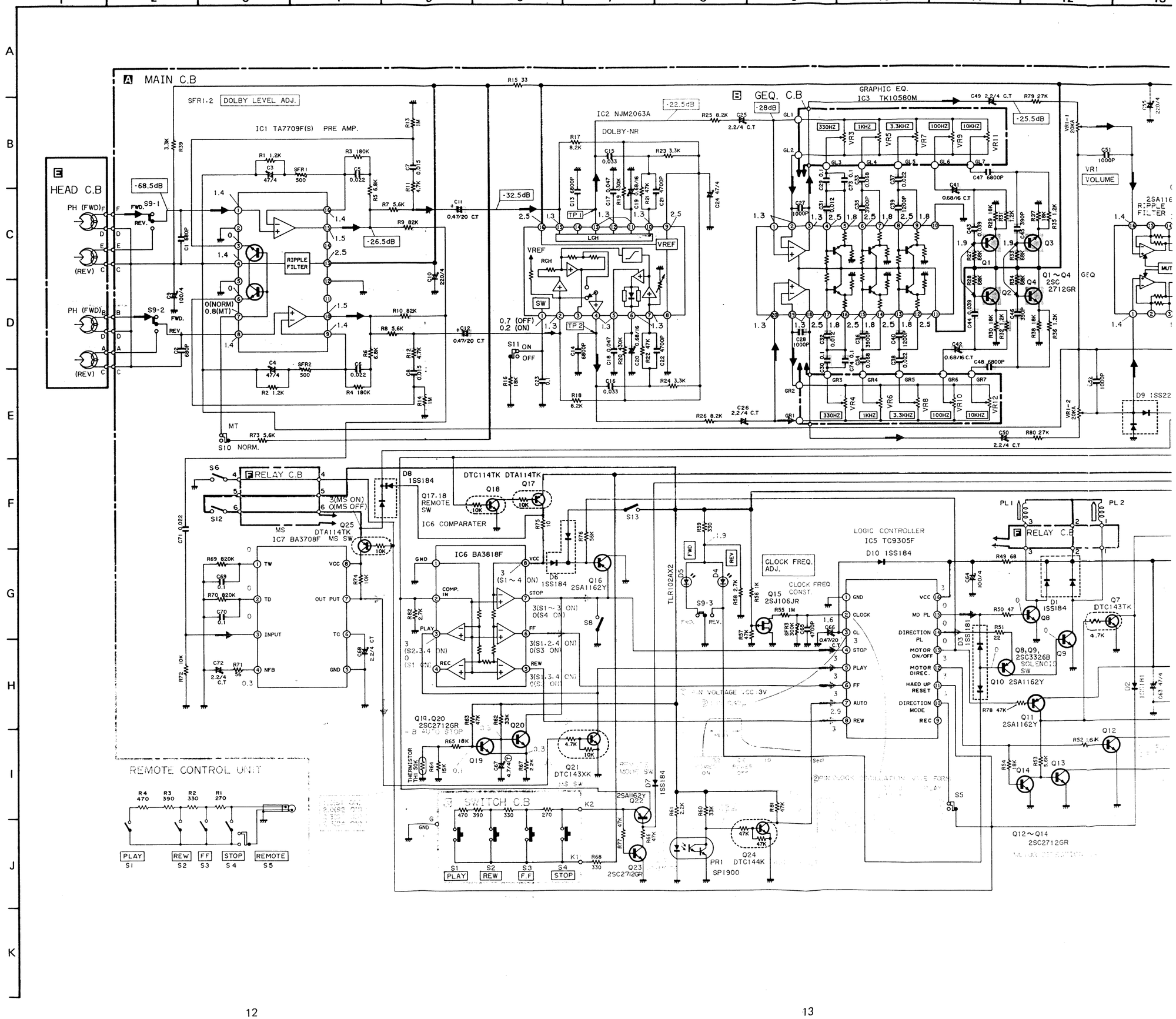
※3 S1 ON 1.6
S2 ON 2.0
S3 ON 2.3
S4 ON 2.5

NO.	1	2	3	4	5	6	7	8
TAGE	0	0	0	0.3	0	—	—	—



nent side pattern (B SWITCH C.B ONLY) Others pattern
the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

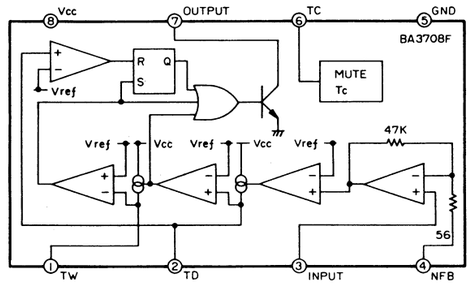
SCHEMATIC DIAGRAM-2 (HS-G08, G500)



Practical Service Figure

Wow and Flutter:	Less than 0.5%
Take up torque:	30^{+10}_{-5} g-cm
FF & rewind torque:	110^{+40}_{-20} g-cm
Back tension:	$2^{+1}_{-0.5}$ g-cm
Signal noise ratio:	50±4／50±4dB (DC／AC)
Distortion:	Less than 2.5%
Noise level:	Less than 8mV (DC. VOL. MAX.) Less than 0.5mV (DC. VOL. MIN.)

BA3708F



WIRING-2 (HS-G08,G500)

IC6

PIN NO.	1	2	3	4
VOLTAGE	0	1.6(S1 ON) 2.0(S2 ON) 2.3(S3 ON) 2.5(S4 ON)	3.0 (S2,3,4 ON) 0 (S1 ON)	3.0
PIN NO.	5	6	7	8
VOLTAGE	3.0 (S1,3,4 ON) 0 (S2 ON)	3.0 (S1,2,4 ON) 0 (S3 ON)	3.0 (S1,2,3 ON) 0 (S4 ON)	3.0 (S1~4 ON)

Clock Frequency Adjustment
Settings: • Adjustment location: S F R 3
• Test point: IC5,⑦pin
Method: Adjust so the oscillation frequency is 3.2kHz.

IC1 ( ):at MT

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	1.4	0	0	1.4	0	0	0 (0.8)	1.4
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	1.4	1.5	—	0	2.5	—	1.5	1.4

IC2 < >:at DOLBY OFF

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	2.5 (0.7)	3	—	1.3	1.3	1.3	1.3	0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	2.5	3	1.3	1.3	1.3	—	1.3	2.5

IC3

PIN NO.	1	2	3	4	5	6	7	8	9	10
VOLTAGE	1.3	1.3	1.3	2.5	1.9	2.5	1.8	2.5	1.8	0
PIN NO.	11	12	13	14	15	16	17	18	19	20
VOLTAGE	2.5	1.8	2.5	1.8	2.5	1.8	2.5	1.3	1.3	1.3

IC4

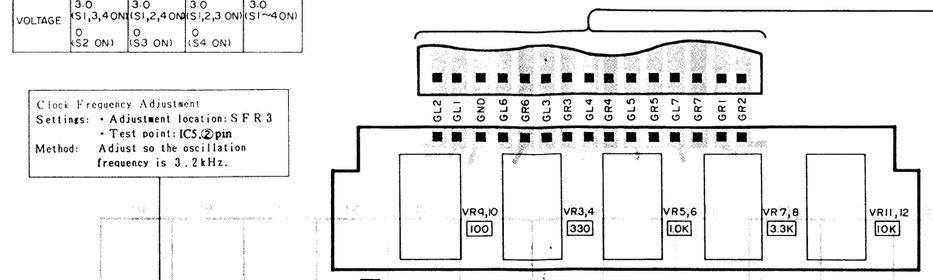
PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	1.4	—	—	1.4	0.5	2.5	1.5	0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	3.0	1.5	2.5	2.3	3.0	—	—	1.4

IC5

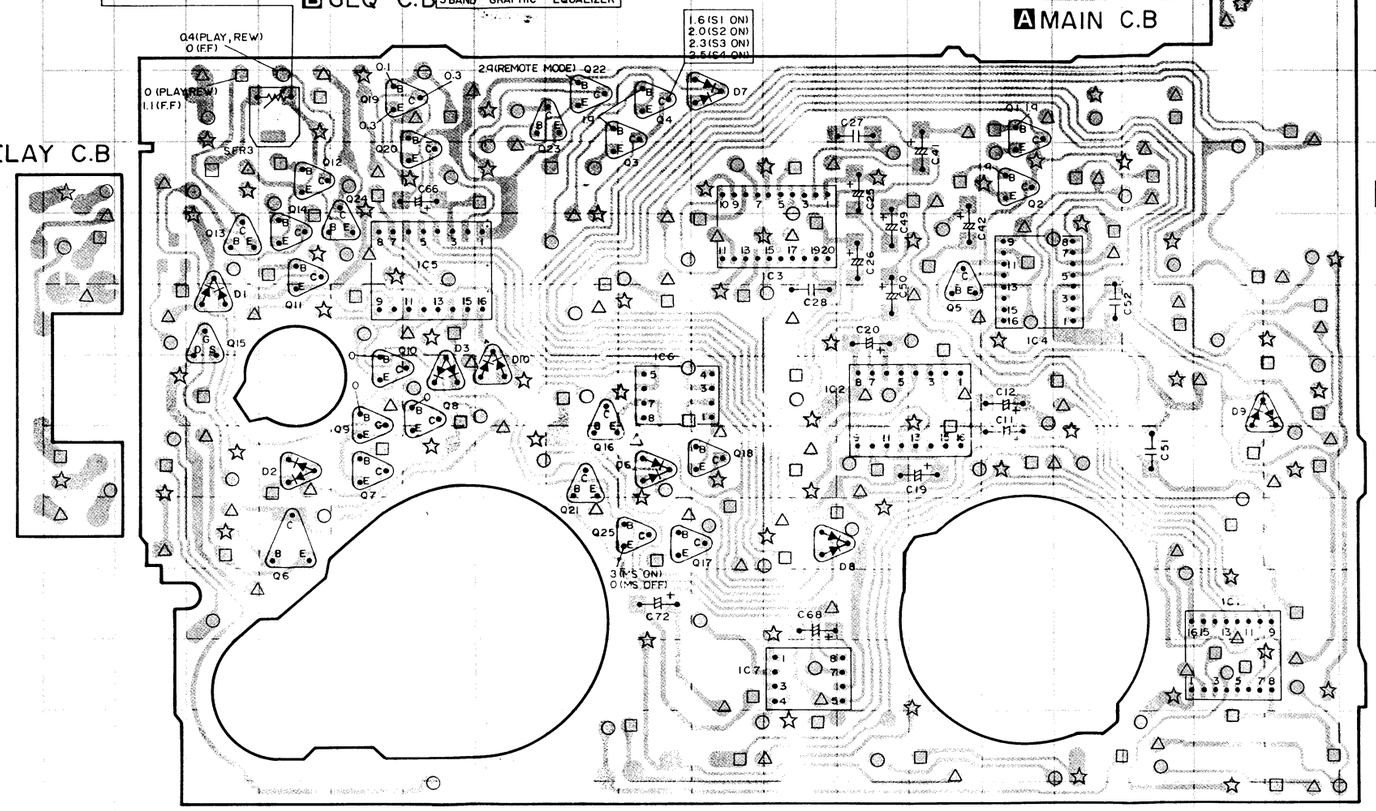
PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	5	3.0	3.0	3.0	3.0	2.9	3.0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	0	3.0	3.0	3.0	0	0	0	3.0

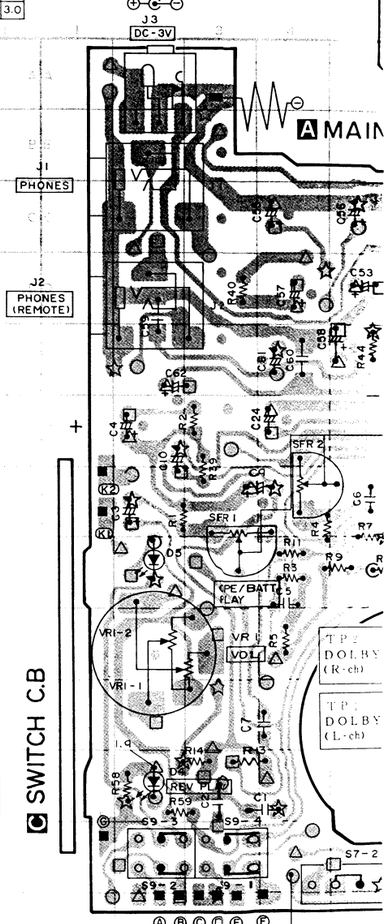
IC7

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	0	0	0.3	0	—	—	—

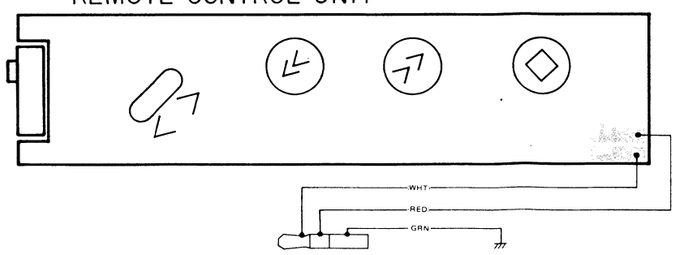


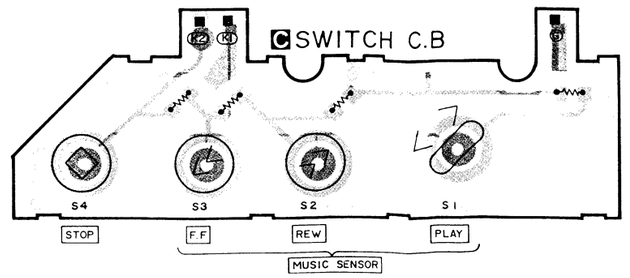
B GEQ C.B 5 BAND GRAPHIC EQUALIZER

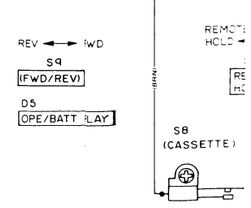




REMOTE CONTROL UNIT







NOTES (1) Component side pattern (C SWITCH C.B ONLY) Others pattern
(2) The voltage is the reference value measured with a tester (20 K ohms/V DC) when there are no signals.

( ):at MT

5	6	7	8					
0	0	0 (0.8)	1.4					
13	14	15	16					
2.5	—	1.5	1.4					

IC2 <>:at DOLBY OFF

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0.2 (0.7)	1.3	—	1.3	1.3	1.3	1.3	0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	2.5	1.3	1.3	1.3	1.3	—	1.3	2.5

IC3

PIN NO.	1	2	3	4	5	6	7	8	9	10
VOLTAGE	1.3	1.3	1.3	2.5	1.9	2.5	1.8	2.5	1.8	0
PIN NO.	11	12	13	14	15	16	17	18	19	20
VOLTAGE	2.5	1.8	2.5	1.8	2.5	1.8	2.5	1.3	1.3	1.3

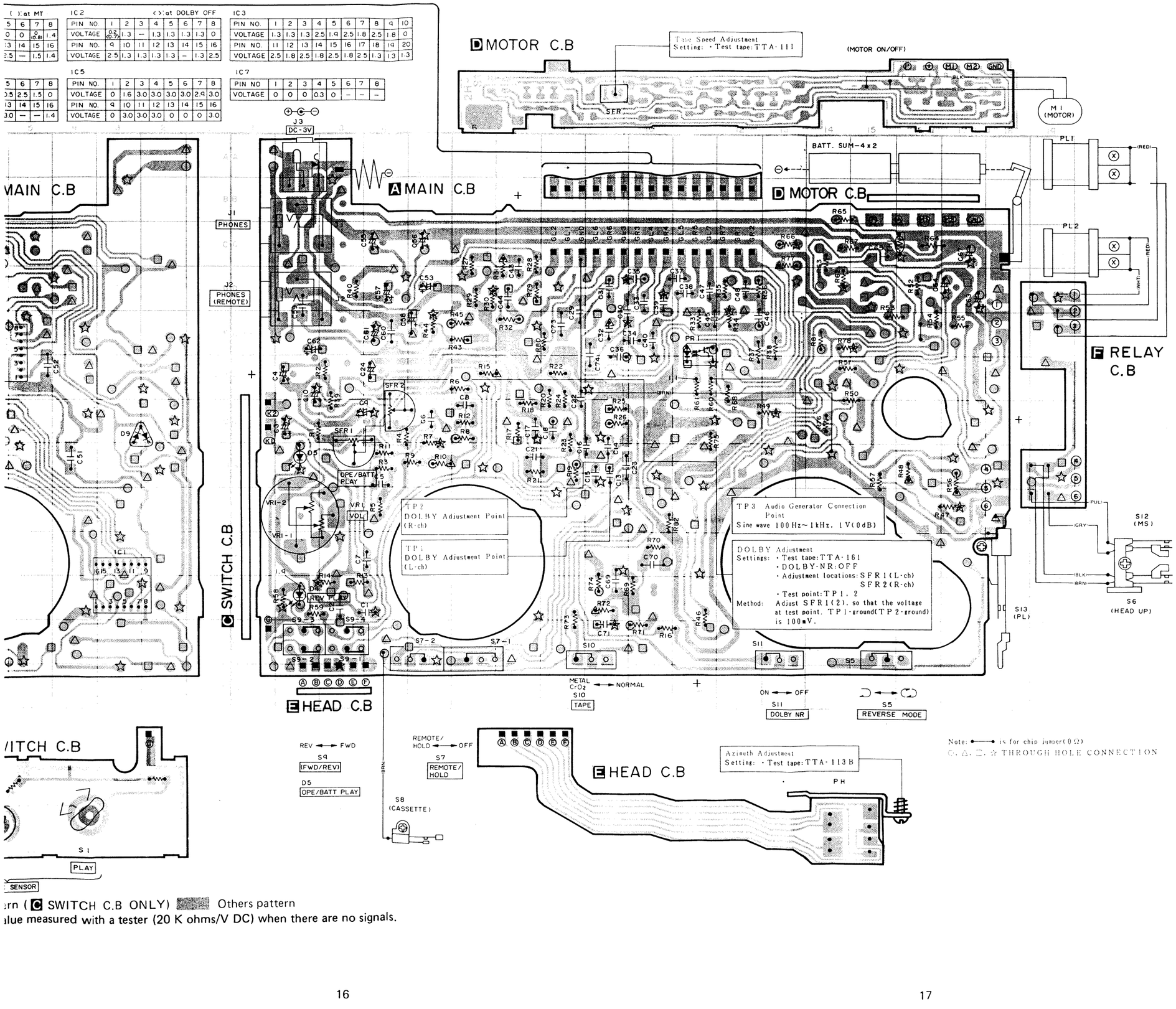
5	6	7	8	
0.5	2.5	1.5	0	
13	14	15	16	
3.0	—	—	1.4	

IC5

PIN NO.	1	2	3	4	5	6	7	8
VOLTAGE	0	1.6	3.0	3.0	3.0	3.0	2.9	3.0
PIN NO.	9	10	11	12	13	14	15	16
VOLTAGE	0	3.0	3.0	3.0	0	0	0	3.0

IC7

PIN NO	1	2	3	4	5	6	7	8
VOLTAGE	0	0	0	0.3	0	—	—	—



ern (C SWITCH C.B ONLY) Others pattern

alue measured with a tester (20 K ohms/V DC) when there are no signals.

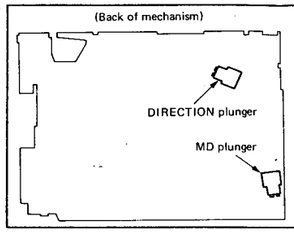
1. Mechanism operating essential points

1-1. Motor rotation direction

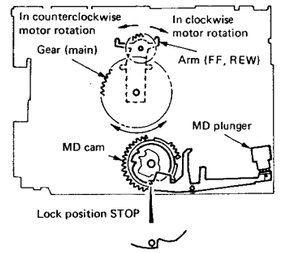
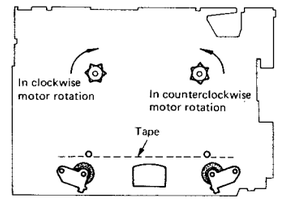
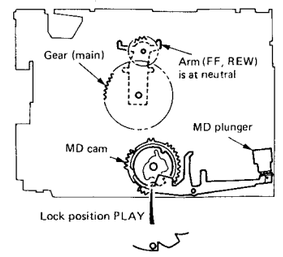
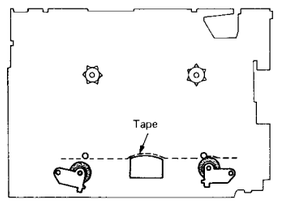
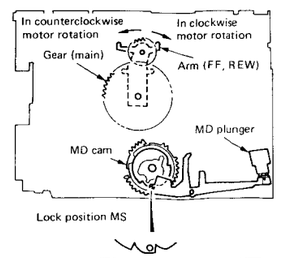
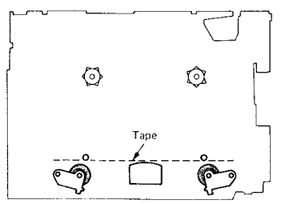
The motor turns counterclockwise in the FF and CUE modes (as viewed from the pulley side). It turns clockwise in other modes.

1-2. Plunger operation

The plungers used in this unit have coils wound over a permanent magnet, and the magnetism of the permanent magnet is cancelled when current flows through the coil.



Name	Function
MD Plunger (PL1)	This plunger switches over the lock position of the MD cam. There are 3 lock positions, and the head position is changed over in 3 steps STOP-PLAY-MS.
DIRECTION Plunger (PL2)	This plunger switches over the tape running direction.

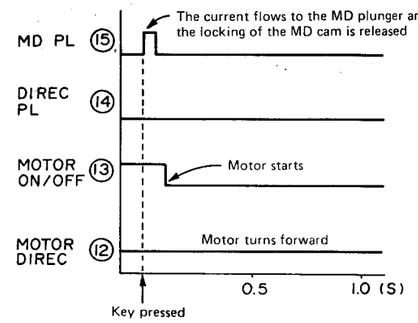
	Description	MD CAM AND GND (FF, REW)	HEAD POSITION
STOP FF REW	When the motor turns clockwise with the head position set to "STOP", the unit enters the REW mode to the tape forward running, and, when the motor turns counterclockwise, the unit enters the FF mode. The arm (FF, REW) is moved by the gear rotation, and is changed over to FF or REW mode.		
PLAY	When the locking of the MD cam is released from the head STOP position, and the lock position advances by one (1), the head position is set to "PLAY". The arm (FF, REW) is in the neutral position at this time. The motor turns only forward and never turns in reverse.		
MS	When the locking of the MD cam is released with the head position set to "STOP", and the lock position advances by one (1), the head position is set to "MS". The arm (FF, REW) is deviated by the gear (main) rotation, and is changed over to CUE or REVIEW.		

FF, REW, CUE and REVIEW shown above are with tape running forward.

2. LOGIC circuit flow

When each key is pressed, the voltage corresponding to the pressed key is applied to pin ② (COMP. IN) of IC₆ BA3818F. At the same time, Q_{18} and Q_{17} are set to ON, and the +B is applied to pin ⑧ (Vcc). BA3818F compares the voltage applied to pin ② with the voltage applied to pin ⑧, and sets the output pin to "LOW" according to its ratio (voltage applied to pin ②/voltage applied to pin ⑧). (Refer to the description of the BA3818F pins). As a result, 2 output pins are never set to "LOW" simultaneously. This LOW signal becomes the input signal of microprocessor (CPU) IC₅ TC9305F.

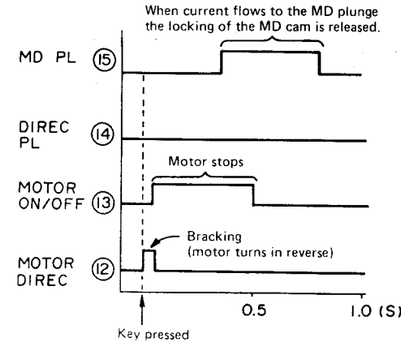
IC₅ TC9305F is set to the initial mode (Logic mode: STOP) when power is supplied. When the LOW signal is input, the signal corresponding to the input is output via pins ⑫~⑮. Pin ⑫ controls the motor rotation direction, pin ⑬, the motor rotation ON/OFF operation, pin ⑭, the DIRECTION plunger and pin ⑮, the MD plunger. (Refer to the description of the TC9305F pins).



State with the PLAY key pressed in the STOP mode.

Fig. 1

TC9305F (microprocessor) memorizes "the type of the signal input" taking the initial state into consideration. As a result, it memorizes "what is the logic mode at present". When the input signal is input, the signal collated with the present logic mode is output. The example is shown in the timing charts below. As is seen in this example, the output pulse width is not constant. This is because there are 3 lock positions (STOP, PLAY, MS), and how to move to which lock position differs depending on the key operation. That is, in the example shown below, it is required to move the MD cam lock position to the PLAY position from the MS position while skipping the STOP position to change the MS mode to the PLAY mode, and the pulse width of the signal output from pin ⑮ which moves the MD plunger is lengthened by that extent.



State with the PLAY key pressed in the forward direction (View MS mode).

Fig. 2

3. Mechanism logic malfunction prevention circuit

When the MD plunger (PL1) is slipped off or the power is cut off during operation for any reason, drift occurs between the logic mode of TC9305F (microprocessor) and the mechanism state, and the operation by the operation key is not performed normally. The mechanism logic malfunction prevention circuit forcibly sets both the logic and mechanism to the STOP mode to prevent this.

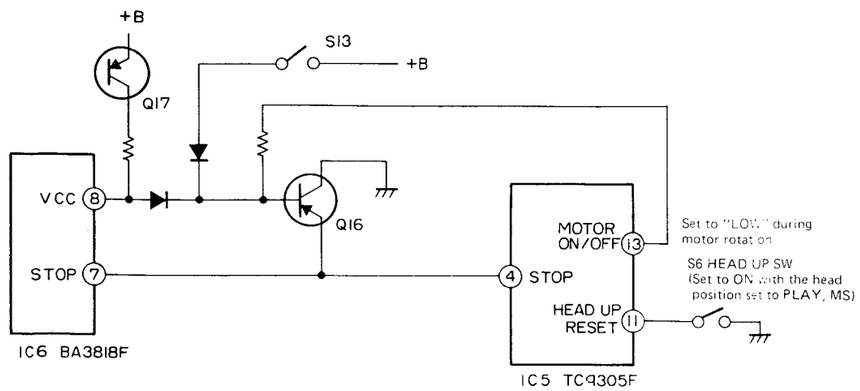


Fig. 3

3-1. When power is cut off during the PLAY/MS modes (HEAD UP RESET operation)

When the power is cut off in the PLAY or MS mode, the logic mode of TC9305F is changed to the STOP mode, but the mechanism is not set to the STOP mode but holds the original mode. When the power is supplied in this state again, the logic mode of TC9305F and the mechanism state are different, so the operation by the key operation is not performed normally. The HEAD UP RESET operation forcibly sets the mechanism to the STOP mode to prevent this.

* Conditions which result in the HEAD UP RESET operation

TC9305F logic mode: STOP, FF REW
Head is up (S6:ON) (PLAY/MS modes or during
→ HEAD UP RESET operation

※ Operation
When the mechanism is in or transferring to the PLAY and MS modes, S_6 (HEAD UP SW) is set to ON. When pin ⑪ is grounded by S6 while the logic mode of TC9305F is in the STOP mode, the signals shown in the timing charts shown below occur at each output pin, and advances the lock position of the MD cam one step ahead. When the mechanism does not enter the STOP mode when advanced by one step, the same operation is repeated.

3-2. When the MD plunger (PL1) is slipped off in the PLAY, MS and REW modes.

S_{13} is set to ON in the normal operation mode (MD plunger PL1 is attracted), +B is applied to the Q_{16} base and Q_{16} is set to OFF. When PL1 is slipped off, S_{13} is set to OFF and Q_{16}, ON, and the STOP command is input to TC9305F, and the logic mode is set to the STOP mode. The head of the mechanism is not positioned at the STOP position at this time, the mechanism also enters the STOP mode via the HEAD UP RESET. (TC9305F pin ⑪ operation)

3-3. When the MD plunger (PL1) is slipped off in the STOP mode

When the PL1 is slipped off in the STOP mode, no change occurs because the motor is not turning, but the following operation is performed when the operation key is pressed.

a) When the PLAY key is pressed
Same as normal operation
b) When the REW key is pressed
The logic of TC9305F is in the REW mode and the mechanism head appears, so both the logic and mechanism are set to the STOP mode by the HEAD UP RESET operation.
c) When the FF key is pressed
The FF operation is performed while the FF key is pressed, but abnormal sounds (gear sounds and rattling sounds of the MD cam) are heard. Rotation stops when the FF key is released. This is because the logic is in the FF mode, and Q_{13} is OFF, so Q_{16} is set to ON to set the logic mode to "STOP".

Note: When the unit enters this state, operate the PLAY key and STOP key in sequence; it enters normal operation.

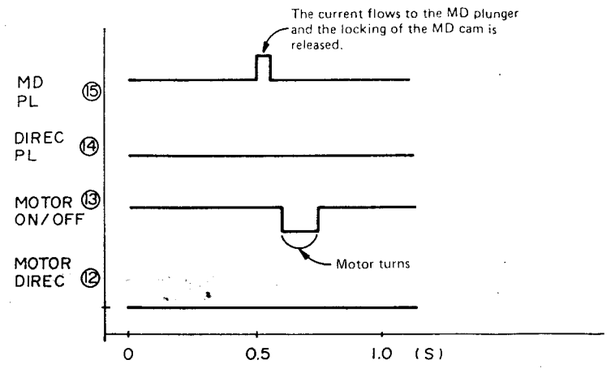


Fig. 4

3-4. When the MD plunger (PL1) is slipped off in the FF mode

Not turned.
Note: When the unit enters this state, operate the PLAY and STOP keys in sequence; it enters normal operation.

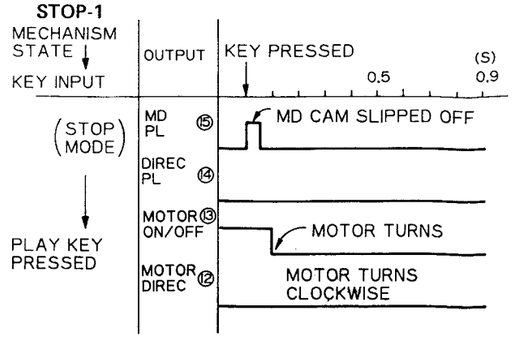
4. TC-9305F pin description

Pin No.	Pin mark	Function
1	GND	GND pin
2	CLOCK	CLOCK oscillation pin Oscillation frequency: 3.2kHz. It is required to keep it at 3.2kHz+10%, −40% to guarantee the operation of the mechanism.
3	CL	CLEAR pin This is reset at "LOW" level.
4	STOP	STOP key input pin Active at "LOW"
5	PLAY	PLAY key input pin Active at "LOW"
6	FF	FF key input pin Active at "LOW"
7	AUTO	TAPE END SENSOR input pin Auto operation (STOP or REVERSE) is performed when the "HIGH" (70% or more of pin ⑯ +B)/"LOW" (30% or less of pin ⑯ +B) change does not occur for 1 sec.
8	REW	REW key input pin Active at "LOW"
9	REC	REC key input pin Active at "LOW". Not used in HS-P08, HS-G08, HS-G500.
10	DIRECTION MODE	DIRECTION MODE select input pin ENDLESS REVERSE at "HIGH" level. One receprocation of REVERSE at "LOW" level.
11	HEAD UP RESET	HEAD UP RESETinput pin When the mechanism is in the HEAD UP mode while the logic of TC9305F is in the STOP, FF or REW mode, this pin is set to "LOW" by S6, and the reset operation is performed to set the mechanism to the STOP mode. (drift between the modes shown above and the mechanism state occurs when the battery is taken out during the set operation.)
12	MOTOR DIRECTION	Motor rotation direction select output pin Set to "HIGH" in FF/CUE modes. Set to "LOW" in other modes.
13	MOTOR ON/OFF	Motor ON/OFF select output pin Motor stops at "HIGH" level.
14	DIRECTION PL	DIRECTION select plunger output pin When the "HIGH" pulse is output, the direction plunger (PL2) is released and the tape running direction is changed.
15	MD PL	MD plunger output pin When the "HIGH" pulse is output, the MD plunger (PL1) is released and the mechanism head position is changed.
16	Vcc	Power pin

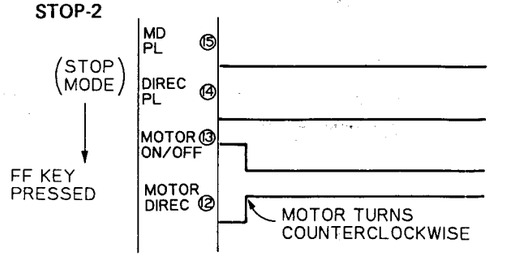
HS-P08, G08, G500 Y HS-P08, G08, G500 Y

5 Timing Chart

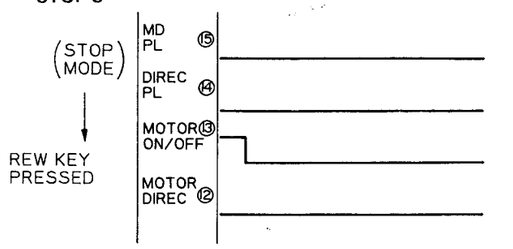
STOP-1



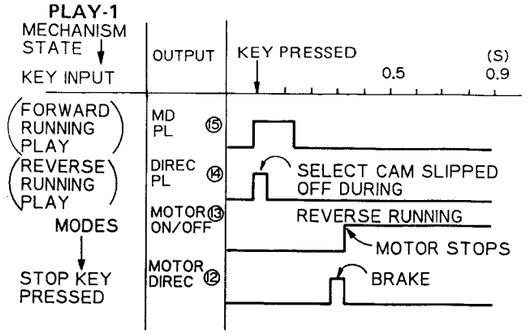
STOP-2



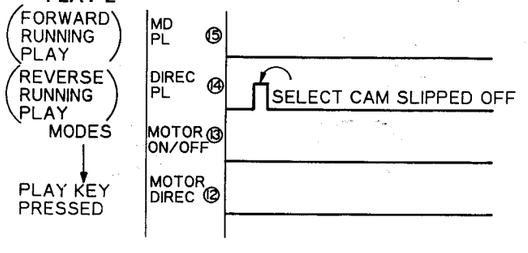
STOP-3



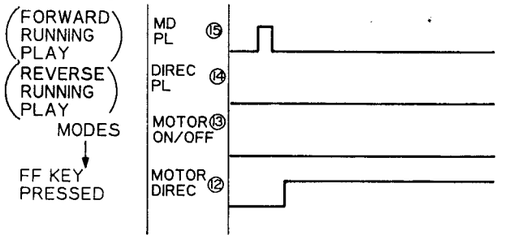
PLAY-1



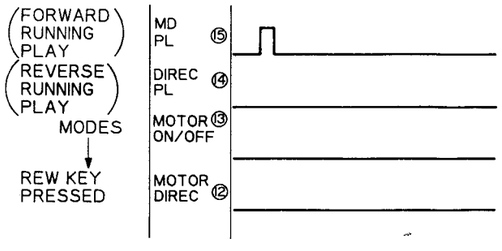
PLAY-2



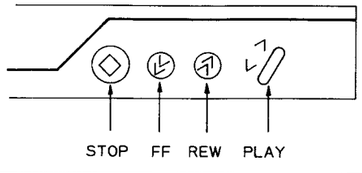
PLAY-3



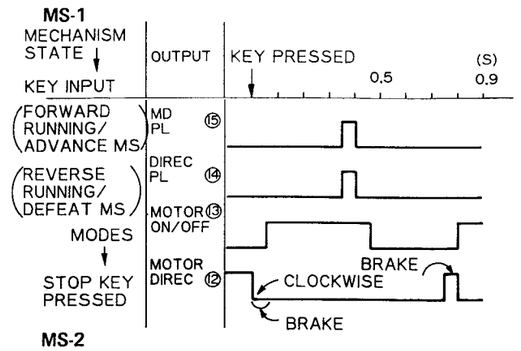
PLAY-4



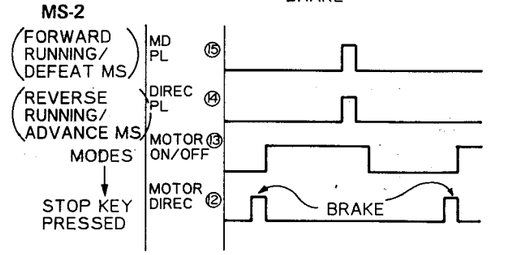
* OPERATION KEY NAMES SHOWN THE TIMING CHART ARE AS FOLLOWS.



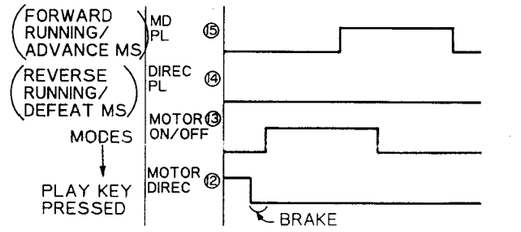
MS-1



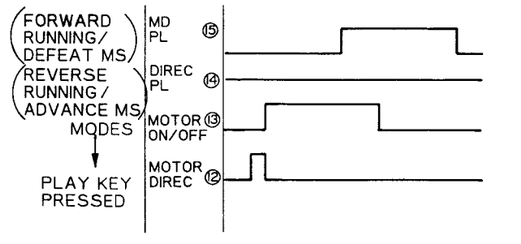
MS-2



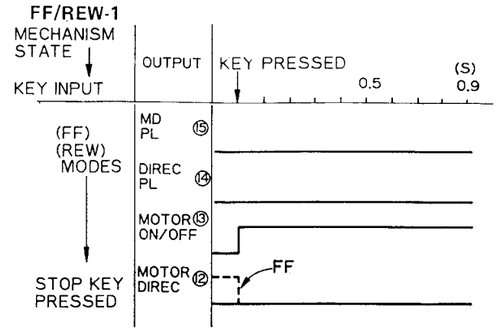
MS-3



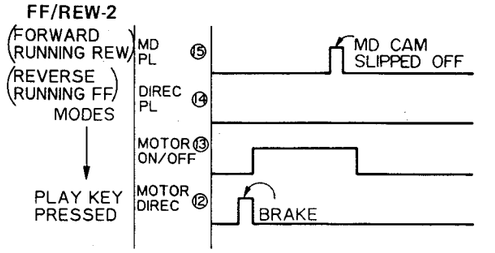
MS-4



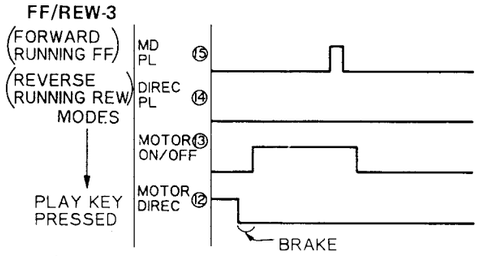
FF/REW-1



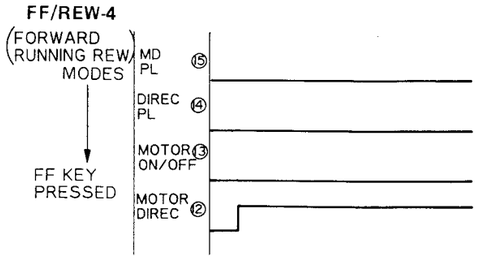
FF/REW-2



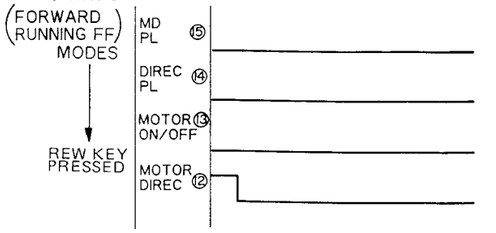
FF/REW-3



FF/REW-4



FF/REW-5



6. BA3708F pin description

Pin No.	Pin mark	Function
1	TW	Output pulse width pin The output pulse width (Tw) is determined by the externally attached CR. Tw(ms)≒1.6×C(μF)×R(KΩ)
2	TD	Inter-tune detection time pin The inter-tune detection time (Td) is determined by the externally attached CR. Td(ms)≒1.7×C(μF)×R(KΩ)
3	INPUT	Input pin
4	NFB	Input amp NFB pin The frequency response and gain are determined by the externally attached CR.
5	GND	GND pin
6	TC	Tune-present detection time pin The tune-present detection time (Tc) is determined by the externally attached C. When the tune length is shorter than Tc, it is not detected as a tune.
7	OUTPUT	Output pin Set to ON in the interval between tunes with open collector.
8	Vcc	Power pin

7. BA3818F pin description

Pin No.	Pin mark	Function
1	GND	GND pin
2	COMP.IN	Input pin The voltage corresponding to the key is applied when the operation key is pressed.
3	PLAY	PLAY key output pin Set to the "LOW" level when the voltage 51%~55% of Vcc is applied to the COMP. IN.
4	REC	REC key output pin Set to the "LOW" level when the voltage 58%~62% of Vcc is applied to the COMP. IN. Not used in HS-P08, HS-G08, HS-G500.
5	REW	REW key output pin Set to the "LOW" level when the voltage 66%~70% of Vcc is applied to the COMP. IN.
6	FF	FF key output pin Set to the "LOW" level when the voltage 73%~77% of Vcc is applied to the COMP. IN.
7	STOP	STOP key output pin Set to the "LOW" level when the voltage 81%~85% of Vcc is applied to the COMP. IN.
8	Vcc	Power pin The reference voltage of every comparator.

Note: Values shown above are the reference values; they differ depending on the IC.

8. Motor pin description

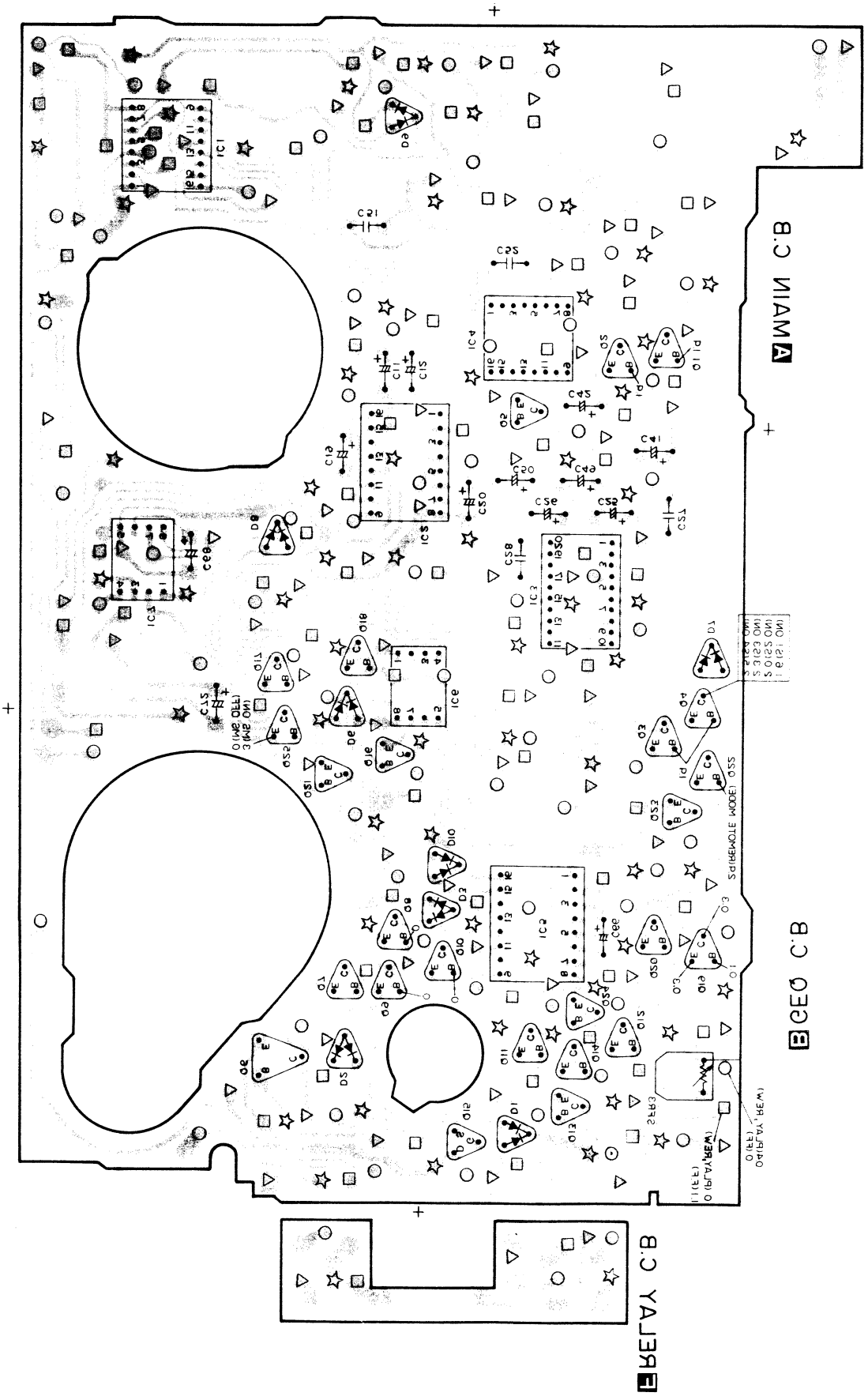
Pin mark	Function
+B	Power pin
GND	GND pin
MOTOR ON/OFF (PAUSE)	Motor rotation ON/OFF pin Turns at "HIGH". Stops at "LOW".
MOTOR1 MOTOR2	Motor rotation direction select pin Motor turns clockwise (viewed from the pulley side) (with motor 1 set to "HIGH" / with motor 2 set to "LOW" Motor turns counterclockwise (viewed from the pulley side) (with motor 1 set to "LOW" / with motor 2 set to "HIGH"

9. Principal switch operations and functions

Switch No.	Pin mark	Function	
S_6	HEAD UP SW	Head position detector switch Set to ON with the head position set to PLAY or MS. Set to OFF with the head position set to STOP. Refer to the circuit description (HEAD UP RESET operation).	
S_7	HOLD SW	ON	Headphone jack B becomes the remote jack. Only the remote operation keys are accepted.
		OFF	Headphone jack B becomes the headphone jack. Only the operation keys of the set are accepted.
S_8	CASSETTE SW	Set to OFF when the cassette lid is closed. Set to ON when the cassette lid is open. The operation key is not accepted at this time. This switch prevents too much load being applied by forcibly inserting the cassette with the head position set to PLAY.	
S_{12}	MS SW	MS circuit ON/OFF switch. Set to ON when the head position is set to STOP or MS. Set to OFF when the head position is set to PLAY.	
S_{13}	PL SW	Mechanism/logic malfunction prevention switch. Set to ON while PL1 is attracted. Set to OFF while PL1 is slipped off.	

TO USE this pattern view, put the (+) mark upon the one of the wiring view.

(Cut off Line)



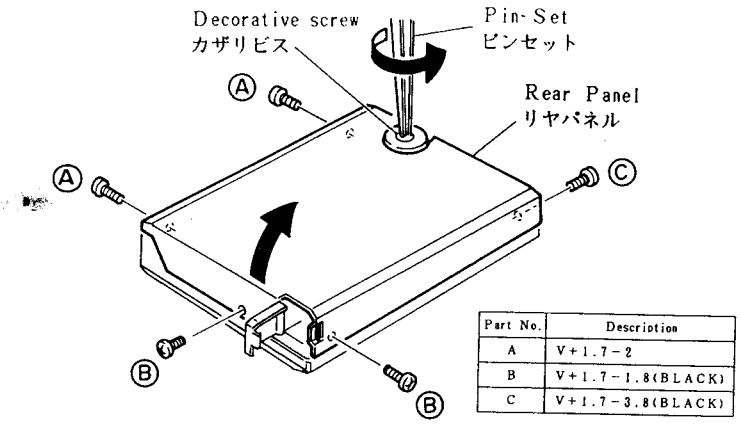
TO USE this pattern view, put the (+) mark upon the one of the wiring view.

(Cut off Line)

DISASSEMBLY INSTRUCTIONS

1. Rear Panel Removal

1) Remove the decorative screw with tweezers.
2) Remove 5 screws (A~C), open the battery lid and remove the rear panel in the direction of the arrow.
(See Figure 1)



Part No.	Description
A	V+1.7-2
B	V+1.7-1.8(BLACK)
C	V+1.7-3.8(BLACK)

Fig. 1

2. Main Circuit Board Removal

1-1) Unsolder 3 positions on the operation circuit board.
(See Figure 2)

Note 1) When the soldered sections are removed from the operation circuit board, set the REMOTE switch of the main unit to "HOLD" and operate the unit using the remote controller.

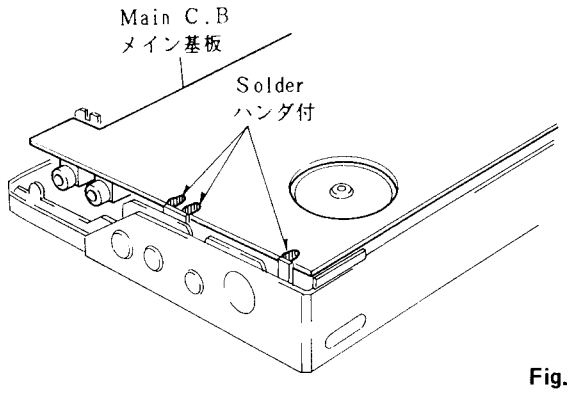


Fig. 2

Caution on reinstallation

When resoldering the unsoldered sections on the operation circuit board, hold the main circuit board so it does not float.

1-2) The main circuit board can be removed without unsoldering the 3 positions on the operation board, however, as the pattern may be cut, take care of the following.
The operation board is fixed to the operation panel using double side adhesive tape. Peel off the tape by inserting tweezers, etc. between the board and panel.
(See Figure 3)

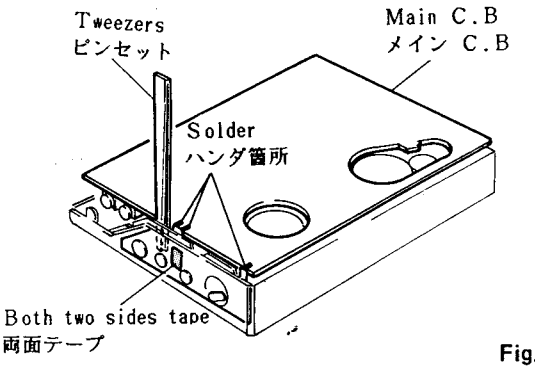


Fig. 3

2) Remove 2 hinge screws and take out the cassette lid in the direction of the arrow (See Figure 4)

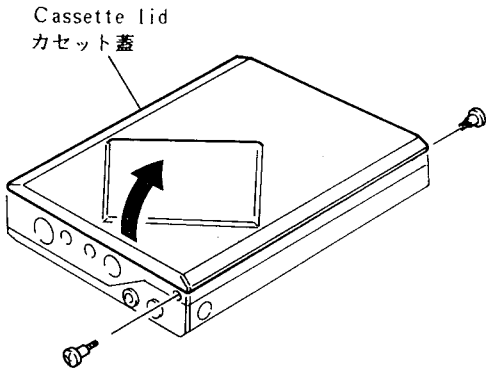


Fig. 4

3) Remove 2 screws, and while pulling section A of the operation panel, remove the panel in the direction of the arrow. (See Figure 5)

Note: For the HS-G08, do the work without removing the flexible circuit board which comes out of the cassette lid.

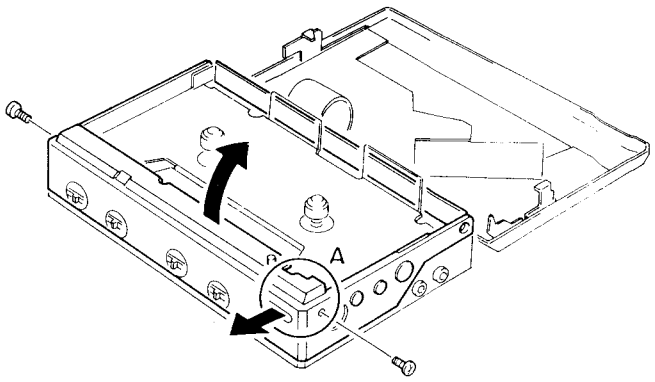


Fig. 5

4) Remove 3 screws from the cassette decorative plate and loosen the wire at sections B and C. (See Figure 6)

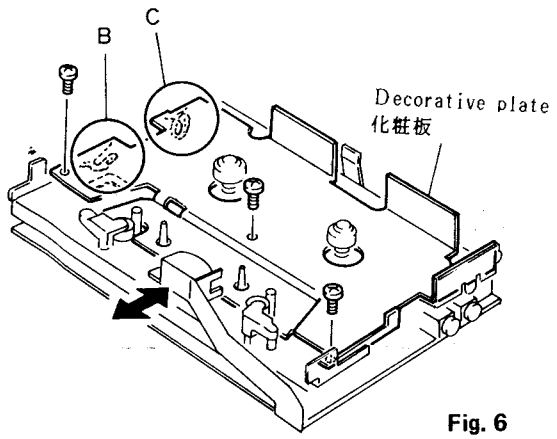


Fig. 6

Caution on reinstallation

Move the head up and down and check that the operation chassis does not touch the wire at section B.
(See Figure 6)

5) Remove 6 screws to release the fitting of the pin and remove the circuit board in the direction of the arrow.
(See Figure 7)

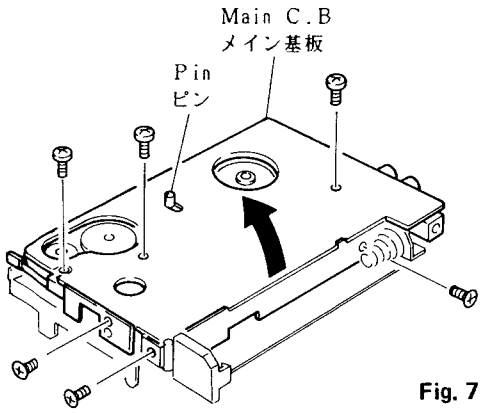


Fig. 7

3. Bottom Plate Assembly Removal

1) Remove the main circuit board.
2) Remove the relay pulley and flywheel L.
(See Figure 8)

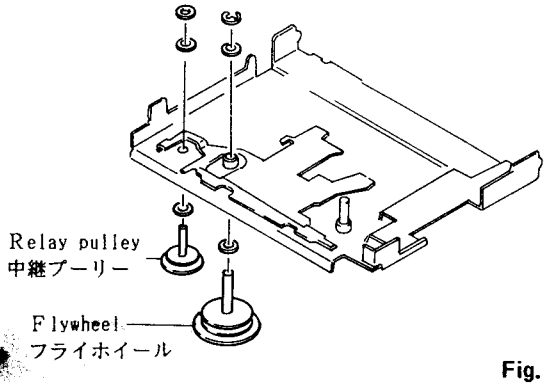
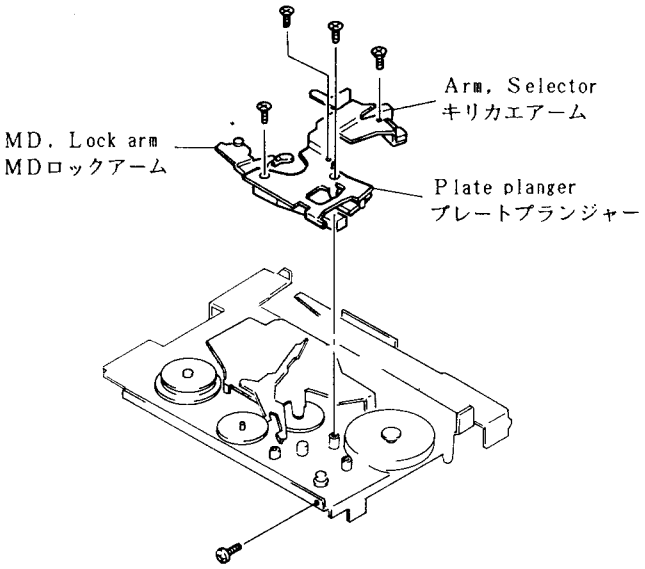


Fig. 8

3) Remove 5 screws and take out the plate plunger.
(See Figure 9)



Caution on reinstallation

Insert the MD lock arm and the tip of the changeover arm into inside of the cam.

4) Remove 3 screws. (See Figure 10)

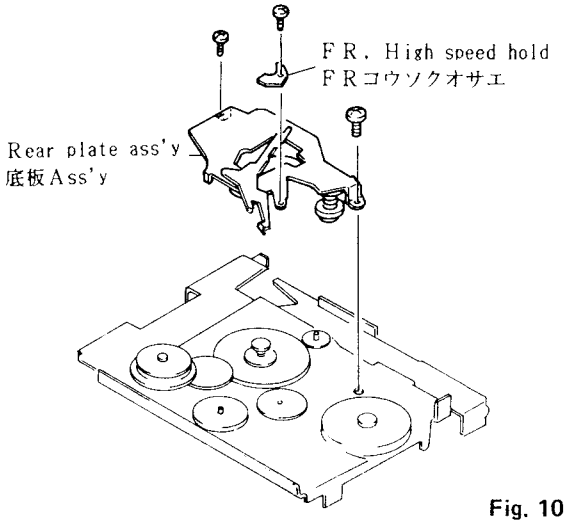


Fig. 10

4. GE Panel Removal

1) Remove the cassette lid.
2) Remove the mask plate at the back of the cassette lid.
(See Figure 11)

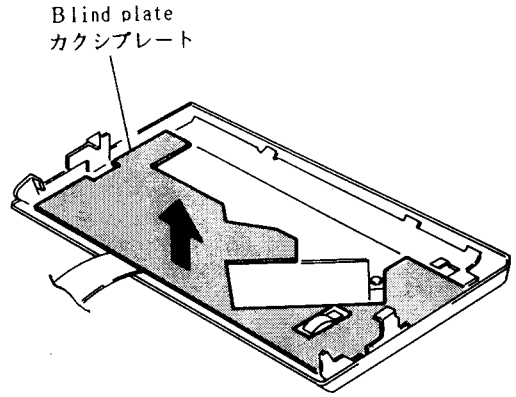


Fig. 11

3) Press section D of the GE panel to release the fitting and move the GE panel in the direction of the arrow. (See Figure 12)
4) Peel off the mylar GE and remove the GE panel.
(See Figure 12)

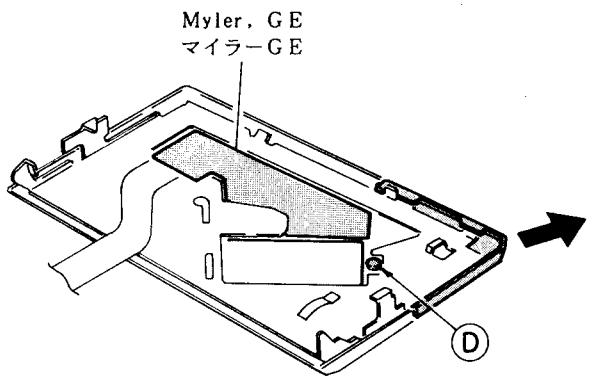


Fig. 12

5. Cautions on reinstalling the rear panel assembly (for the HS-G08)

1) Check that 2 mylar sheets are pasted on the rear panel.
(See Figure 13)

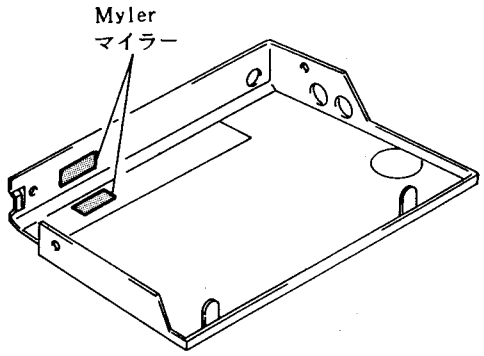


Fig. 13

2) Check the adhesive strength of the double side adhesive tape adhered to the flexible circuit board of the graphic equalizer controls.
3) After reinstalling the rear panel, insert a philips (+) screwdriver into the battery case and push the flexible circuit board against the rear panel.
(See Figure 14)

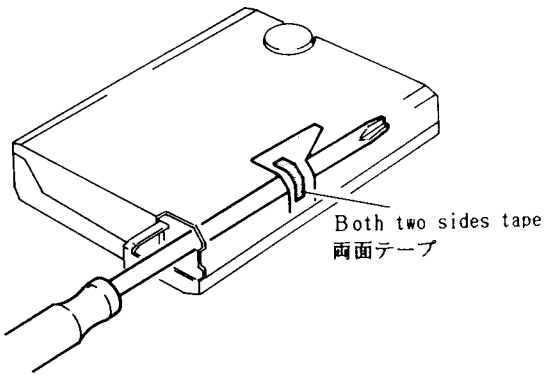
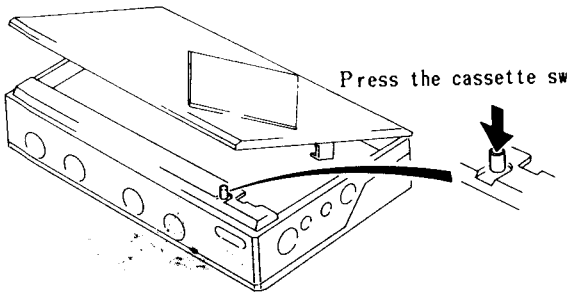
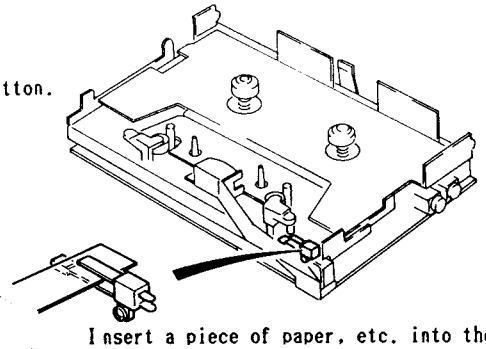


Fig. 14

1. Caution on servicing

Turn OFF cassette switch S 8 when testing the unit with the cassette lid open or external case removed.

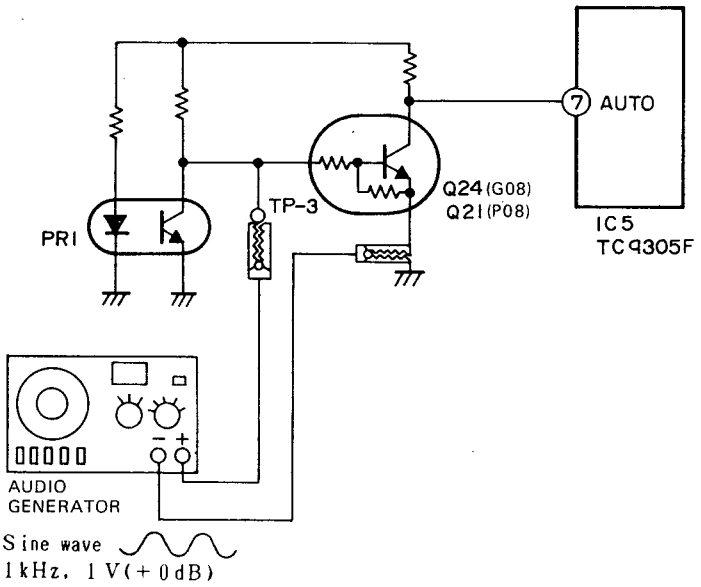




Insert a piece of paper, etc. into the leaf switch.

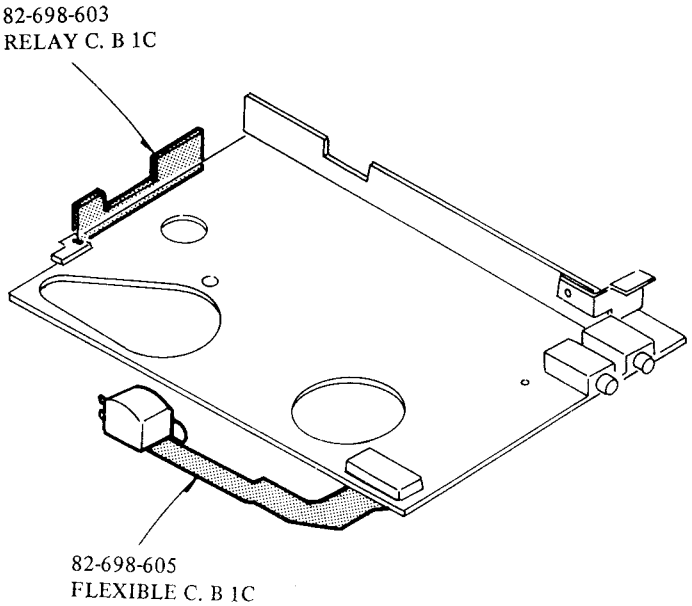
2. Operation check method with the circuit board removed

When the unit is operated with the circuit board removed from the mechanism, the auto functions (auto-stop, auto-reverse) work as the voltage is not changed by the photo-reflector (PR1). When operating the unit after removing the circuit board, connect an audio generator to the following positions.

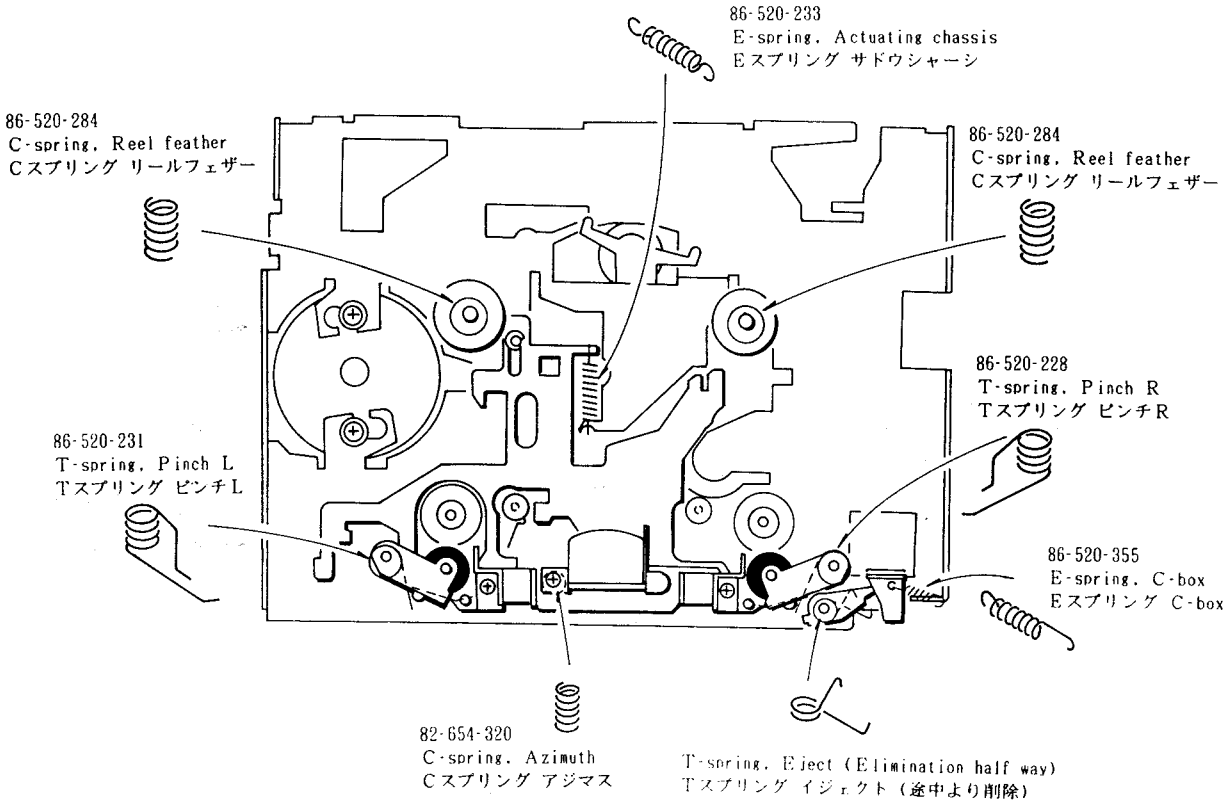


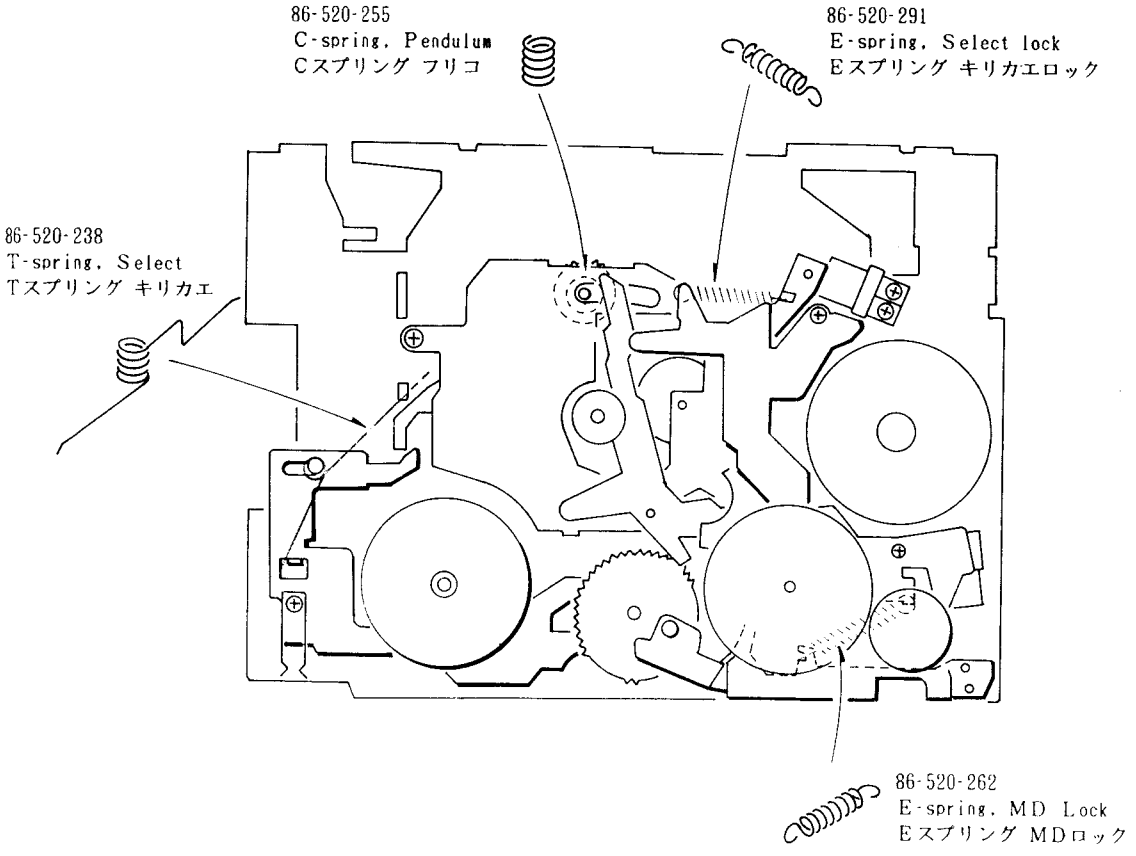
3. Additional Service Parts

The circuit boards shown in the figure below can be supplied as the service parts.



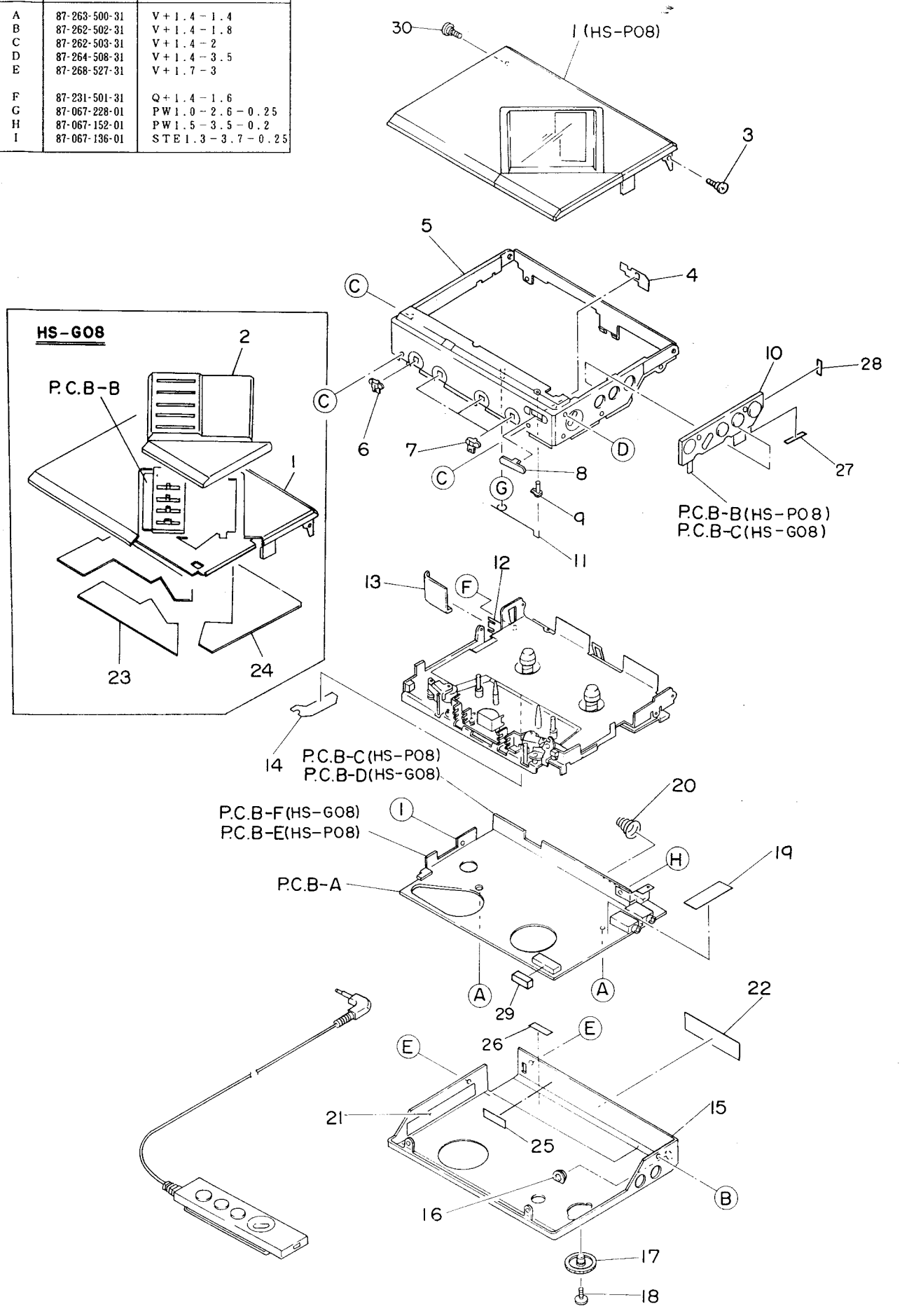
SPRING APPLICATION POSITION





EXPLODED VIEW-1

Ref. No.	Part No.	Description
A	87-263-500-31	V+1.4-1.4
B	87-262-502-31	V+1.4-1.8
C	87-262-503-31	V+1.4-2
D	87-264-508-31	V+1.4-3.5
E	87-268-527-31	V+1.7-3
F	87-231-501-31	Q+1.4-1.6
G	87-067-228-01	PW1.0-2.6-0.25
H	87-067-152-01	PW1.5-3.5-0.2
I	87-067-136-01	STE1.3-3.7-0.25



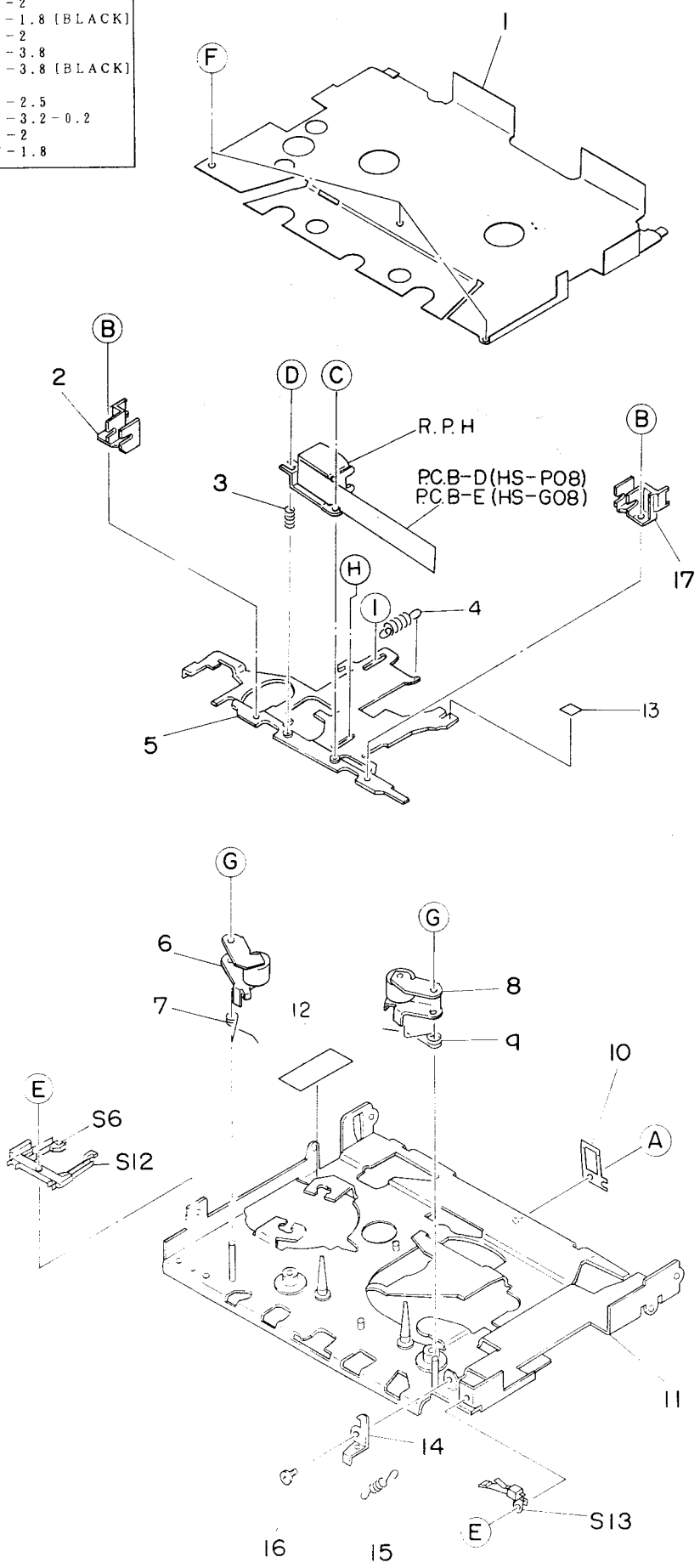
MECHANICAL PARTS LIST

- ※ mark in this part list shows exclusive part.
- ★-mark means less required items availabilities may be limited.
- No availability part is marked with —— in Part No. list.
- [R]=RED, [B]=BLACK, [S]=SILVER

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty
	1-1	09-027-338	CASSETTE LID Ass'y [S] (HS-G08, G500)	※	1
		09-027-339	CASSETTE LID Ass'y [R] (HS-G08)	※	1
		09-027-340	CASSETTE LID Ass'y [B] (HS-G08)	※	1
		09-027-335	CASSETTE LID Ass'y [S] (HS-P08)	※	1
		09-027-336	CASSETTE LID Ass'y [R] (HS-P08)	※	1
		09-027-337	CASSETTE LID Ass'y [B] (HS-P08)	※	1
	1-2	09-027-341	GRAPHIC E.Q. PANEL Ass'y (HS-G08)	※	1
		09-027-342	GRAPHIC E.Q. PANEL Ass'y (G500 YUS)		1
	1-3	★82-679-215	SCREW +1.4	HS-P07	1
	1-4	★82-698-212	LEVER, EJECT	※	1
	1-5	★82-698-002	PANEL, CONTROL	※	1
	1-6	82-698-026	KNOB, SELECTOR GR	※	1
	1-7	82-698-007	KNOB, SELECTOR	※	3
	1-8	82-679-024	SLIDE KNOB, LOCK	HS-P07	1
	1-9	★82-698-010	BUTTON, SWITCH	※	1
	1-10	82-698-608	KEY, CONTROL	※	1
	1-11	★82-698-210	SPRING	※	1
	1-12	82-698-206	BATTERY TERMINAL (+) Ass'y	※	1
	1-13	82-698-006	LID, BATTERY	※	1
	1-14	★82-698-219	MYLER PLATE	※	1
	1-15	★82-698-037	REAR PANEL Ass'y	※	1
	1-16	★82-670-023	SPACER JACK	HS-P05	1
	1-17	82-698-009	KNOB, VOL	※	1
	1-18	★82-698-011	DECORATIVE SCREW	※	1
	1-19	—	HIMELON 7-18		1
	1-20	82-698-209	C-SPRING, TERMINAL	※	1
	1-21	—	MYLER, RELAY CIRCUIT BOARD		1
	1-22	—	LABEL, SPEC. (HS-G08)		1
		—	LABEL, SPEC. (HS-P08)		1
	1-23	★82-698-224	MYLER GE (HS-G08)	※	1
	1-24	★82-698-216	BLIND PLATE (HS-G08)	※	1
	1-25	—	P.V.C SHEET 14-3.5-0.5 (HS-G08)		1
	1-26	—	MYLER 14-3.5-0.188 (HS-G08)		1
	1-27	—	MYLER 7-1.5		1
	1-28	—	SHEET 4-1.5		
	1-29	—	CUSHION, MODE SELECT		1
	1-30	★82-681-221	SCREW, CENTER CABINET		1

EXPLODED VIEW-2

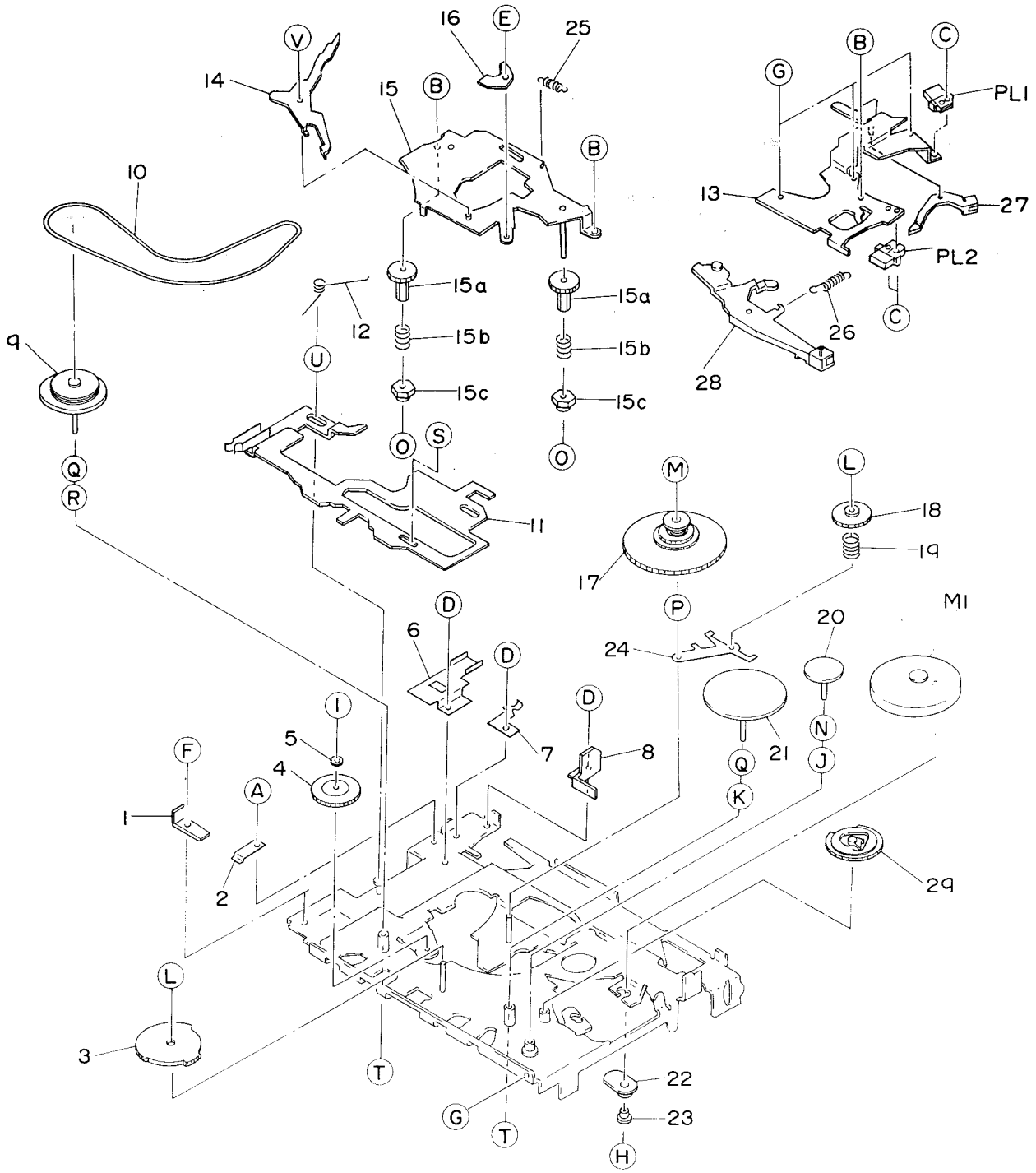
Ref. No.	Part No.	Description
A	87-264-503-31	V+1.4-2
B	87-067-241-01	V+1.7-1.8 [BLACK]
C	87-263-523-31	V+1.7-2
D	87-263-048-31	V+1.7-3.8
E	87-067-242-01	V+1.7-3.8 [BLACK]
F	87-234-505-31	Q+1.4-2.5
G	87-067-007-01	PW1.7-3.2-0.2
H	87-237-503-31	Q+1.4-2
I	87-263-522-31	V+1.7-1.8



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	2-1	★82-698-016	CASSETTE DECORATIVE PLATE	※	1	
	2-2	★86-520-223	GUIDE L, TAPE		1	
	2-3	★82-654-320	C-SPRING, AZIMUTH	HS-P02	1	
	2-4	★86-520-233	E-SPRING, ACTUATING CHASSIS		1	
	2-5	★86-520-218	ACTUATING CHASSIS Ass'y		1	
	2-6	86-520-229	PINCH ARM L Ass'y		1	
	2-7	★86-520-231	T-SPRING, PINCH L		1	
	2-8	86-520-224	PINCH ARM R Ass'y		1	
	2-9	★86-520-228	T-SPRING, PINCH R		1	
	2-10	★82-698-205	T. SP, CASSETTE HOLDER	※	1	
	2-11	★86-520-202	CHASSIS SEMI Ass'y P		1	
	2-12	—	HIMELON 8-20		1	
	2-13	—	NYLON SHEET		1	
	2-14	★86-520-342	LOCK PLATE, C-BOX		1	
	2-15	★86-520-355	E-SPRING, C-BOX		1	
	2-16	★86-520-341	SCREW, EJECT		1	
	2-17	★86-520-222	GUIDE R, TAPE		1	

EXPLODED VIEW-3

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
A	87-264-500-31	V+1.4-1.4	I	87-231-508-31	Q+1.4-3.5	Q	87-067-143-01	PW2.1-4-0.13
B	87-262-503-31	V+1.4-2	J	87-081-945-01	PW1.2-3-0.25	R	81-510-275-11	PW2.1-3.5-0.25
C	87-067-246-01	V+1.4-3.7	K	86-520-370-01	PW1.9-3.1-0.25	S	87-441-003-01	STE-1.5
D	87-263-522-31	V+1.7-1.8	L	87-067-137-11	PW1.5-3.5-0.25	T	87-510-300-01	STE-1.5S
E	87-234-505-31	Q+1.4-2.5	M	87-067-152-01	PW1.5-3.5-0.2	U	87-441-005-01	STE-2
F	87-231-501-31	Q+1.4-1.6	N	87-067-253-01	PW1.57-2.8-0.3	V	86-551-472-01	LW1.5-3.5-0.2
G	87-238-503-31	Q+1.4-2	O	87-067-233-01	PW1.7-3.5-0.25			
H	87-233-526-31	Q+1.7-2.8	P	87-067-234-01	PW1.5-3.5-0.3			



Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	3-1	★86-520-366	PLATE, BEARING CIRCUIT BOARD		1	
	3-2	★82-698-215	P-SPRING, CASSETTE	※	1	
	3-3	86-520-240	MD CAM		1	
	3-4	86-520-241	GEAR A		1	
	3-5	★86-520-242	COLLAR, GEAR A		1	
	3-6	—	HOLDER, JACK		1	
	3-7	★82-698-203	P-SPRING, CLICK	※	1	
	3-8	—	HOLDER, BATTERY		1	
	3-9	86-520-396	FLYWHEEL R M Ass'y		1	
	3-10	86-520-292	BELT, MAIN		1	
	3-11	★86-520-234	SELECT LEVER Ass'y		1	
	3-12	★86-520-238	T-SPRING, SELECT		1	
	3-13	★86-520-346	PLATE SOLENOID SEMI Ass'y		1	
	3-14	★86-520-289	ARM FR HIGH SPEED		1	
	3-15	86-520-263	BOTTOM PLATE CHASSIS Ass'y		1	
	15a	★86-520-283	GEAR, REEL PLATFORM		2	
	15b	★86-520-284	C-SPRING, REEL FEATHER		2	
	15c	★86-520-282	REEL FEATHER R		2	
	3-16	★86-520-381	FR HIGH SPEED HOLDER		1	
	3-17	86-520-243	GEAR MAIN Ass'y		1	
	3-18	86-520-254	GEAR, PENDULUM		1	
	3-19	★86-520-255	C-SPRING, PENDULUM		1	
	3-20	86-520-256	RELAY PULLEY Ass'y		1	
	3-21	86-520-299	FLYWHEEL L Ass'y		1	
	3-22	★86-520-349	G CUSHION, MOTOR		2	
	3-23	★86-520-352	COLLAR, MOTOR		2	
	3-24	★86-520-251	ARM FF REW SEMI Ass'y		1	
	3-25	★86-520-382	E-SPRING, SELECT LOCK N		1	
	3-26	★86-520-262	E-SPRING, MD LOCK		1	
	3-27	★86-520-372	ARM SELECT LOCK N Ass'y		1	
	3-28	★86-520-348	MD LOCK ARM Ass'y		1	
	3-29	86-520-239	SELECT CAM		1	

■ACCESSORIES/PACKAGE LIST

HS-P08

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	1	★82-699-904	INSTRUCTION BOOKLET	※	1	
	2	★82-698-951	RC-8P	HS-G08	1	
	3	★82-698-952	CARRYING CASE	HS-G08	1	
	4	★87-048-118	HP-M10 (L) MK.2		1	
	5	★87-080-017	BELT HANGER B Ass'y		1	

HS-G08·G500

Part No. changed to	Ref. No.	Part No.	Description	Common Model	Q'ty	
	1	★82-698-904	INSTRUCTION BOOKLET (Y only)	※	1	
	2	★82-698-905	INSTRUCTION BOOKLET (YU only)	※	1	
	3	★82-698-951	RC-8P	※	1	
	4	★82-698-952	CARRYING CASE	※	1	
	5	★87-048-118	HP-M10 (L) MK.2		1	
	6	★87-080-017	BELT HANGER B Ass'y		1	

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